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BOUNDARY AGREEMENTS

IN FORCE BETWEEN

THE ARGENTINE REPUBLIC AND CHILI

BY

Dr. EMILIO LAMARCA

BUENOS AIRES

IMPRENTA DE M. SIEPMA É HIJO, BOLIVAR 535

1898

BOUNDARY AGREEMENTS

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Buenos Aires, 17th December 1898.

To H. E. the Minister of Foreign Affairs,

Doctor Amancio Alcorta.

Sir,

The difficulties met with in translating the boundary conventions between the Argentine Republic and Chili become still more embarrassing on account of the incorrect versions to be found in English journals, and especially in such important official publications as the « State Papers » of the British Government and the « Foreign Relations » of the United States, which, for the last eighteen years, have been unintentionally misleading public opinion.

§ 1.—In order to explain matters graphically, I beg to submit the following sheet in which are set forth the numerous discrepancies that occur in the first few lines of article 1 of the treaty of 1881, as translated by four different persons, two of them officials of the above mentioned governments.

My statement shows that the very first question which arises for the Argentine and Chilian Cabinets is: how to lay before the arbitrator, in good and correct English, the subject-matter of the arbitration. It is obvious that the arbitrator's decision

may differ greatly according to the version he follows, as all the translations diverge in most weighty and substantial points.

No wonder if it happened that the Chilian translation did not tally with the Argentine, however conscientiously I may have endeavoured to give a loyal and trustworthy version, founding it on the best dictionaries, on the writings of Chilian authors, on Messrs. Barros Arana's and Bertrand's own books, on well known literary works and on such scientific treatises as deal with the technical questions involved in the boundary conventions.

The mistakes which I am bound to criticize teach me to be very cautious, and I may therefore appear to be too scrupulous regarding details which perhaps are unneccessary or not likely to be questioned.

Without need of my enlarging on this subject, Y. E. will surely excuse me when I add that I have considered it my duty to draw the attention of my government to a matter of the greatest moment, which directly and in a most decisive manner affects the very issue of our international controversy with Chili.

§ 2.—In order to present a genuine version of the documents sent to me by the Department of Foreign Affairs, I found that in the first place, it was necessary to clearly understand their meaning, and then to choose for the translation such wordings as would faithfully convey in English the true sense of the Spanish text. Dictionaries give as synonyms a number of words which are not so, and is it not always easy to discriminate the delicate yet most material differences between them. I felt soon that I had taken upon myself a very serious task; and, when, to my astonishment, I discovered that, the translations I had before me construed the treaties in a most contradictory manner, and would consequently lead to three quite divergent arbitral decisions, I could not but warn Y. E. of the existence of a fact which would unwittingly and unexpectedly jeopardize national interests. On the other hand, no alternative was left me, but

t/o/

that of justifying my own version of the agreements with numerous references to the sources of my information.

§ 3.—There is a Carthaginian way of construing voices as there is one of applying measures. It is therefore indispensable to grasp well the meaning of words if one wishes to use them with precision, to foil tergiversations and also to appreciate with accuracy the practical consequences of their employment. The vocables « slopes », « crest » and « watershed » are signal examples of what I state, as the first one has been transformed into a spring or a source, the second is liable to be substituted by the word « summit », which generally does not imply a line, and the third is a generic term that may be stretched so as to cover continental proportions or reduced to the insignificant divide of a hummock.

SLOPE.

§ 4.—I am perfectly convinced that the common Spanish-English and English-Spanish dictionaries, have caused the translators to commit grievous errors that completely alter the sense of the original documents. For instance: the lexicons of Lopes and Bensley, and of Velasquez de la Cadena say :—« *Ver-* « *tiente* (substantive). 1. Waterfall, cascade. 2. Spring, source. « —(Present participle)—flowing; »—and yet, in the very same volume, under none of those five words, is to be found the term *vertientes*, which in Spanish, according to the dictionaries of the Royal Academy and of Dominguez, and according to Mr. Barros Arana himself, signifies: « the sides of the monntains « down which their waters flow or descend,—places or grounds « where said waters run or may run », that is to say, the flanks, sides, declivities, slopes, inclines of a mountain-region,—words which correspond to the Spanish *flancos, lados, laderas, declives, pendientes de una serranía*, and not waterfalls *(saltos ó caídas de agua)*, cascades *(cascadas)*, springs and sources *(manantiales y fuentes)*, as they are translated by the first two authors above mentioned.

§ 5.—Louis Tolhausen in his excellent *"Spanisch-Deutsches und Deutsch-Spanisches Wörterbuch"*, confirms what I say. In German, a slope is a an *Abhang*, also *Gehänge* and *Abfall*, of which words he gives the following Spanish versions:

a) « ABHANG: subida, cuesta, costanera, VERTIENTE, pendiente, « declive, declivio, repecho, recuesto, abajadero, descenso, es- « carpa ».

b) « GEHÄNGE: pendiente, declive ».

c) « ABFALL *des Bodens:* pendiente, declive, talud, caída, falda, cuesta ».

So far he agrees with the Spanish, English, French and Italian dictionaries quoted in notes 6 and 20. In the latter a reference is made to Tolhausen's second edition of his lexicon, where he translates:

d) « AGUAS VERTIENTES: herabfallendes Wasser », i. e.: water that falls or flows down,—which is not quite the right meaning as given by the Royal Spanish Academy, viz.: « aguas que bajan de las montañas », — waters that descend from the mountains. — However, in his third edition, he is more correct, though not altogether so:

e) « AGUAS VERTIENTES: Regenströme von den Gebirgen »,— torrents or rainstreams from the mountains, — a version which has the defect of limiting the word to meteoric waters, whilst in Spanish the participle or adjective «vertientes», qualifying the word «aguas», refers to all kind of waters that run down the mountains. As a substantive, he translates it thus:

f) « VERTIENTE: Wasserfall,—Abfall des Wassers ». In this he is wrong, because the noun «vertiente» is not a waterfall in Spanish, as shown in note 6; but he is right when he says: —«Abfall eines Gebirges».—In the first part, Tolhausen himself proves that he is in the wrong, when he gives us the meaning of the word:

g) « WASSERFALL: cascada (cascade), caída de agua (water- « fall), catarata (cataract) »; but he does not add « vertiente », which is a slope.

Finally Tolhausen never jumbles «vertientes» and «Quellen», which is the German for «sources».

§ 6.—It has been alleged (v. note 6) that, «vertientes» means, in the vulgar and common language, springs or sources. The argument is a poor one indeed for the defence of the so-called «aquatic translations», so much in vogue on the Pacific coast. It were ridiculous to suppose that the plenipotentiaries who concluded the treaties of 1881 and 1893 spoke or wrote in their respective vernacular dialects. I can answer for that not being the case with Argentine, and I have no right to attribute vulgarities to Chilian statesmen, least of all to Mr. Barros Arana who has so well defined the term in question (v. § 68). To insert in a diplomatic document a word which bears a well known literary and scientific meaning, and pretend later on it was only employed in the sense that common or ignorant pleople use it, is not a case of vulgarity: it might appear to some as one of duplicity.

I beg to draw attention to what is stated in § 71 regarding the Barros-Elizalde treaty, which was not approved, and where the phrase «manantiales de las vertientes» existed. The word «manantiales» (sources or springs) was expressly suppressed in the drafting of the treaty of 1881; and still certain gentlemen continue finding it there and also translating it! — (v. *Límites con Chile, Artículos*, by Dr. Bernardo de Irigoyen, pp. 40 &).

§ 7.—If «slope» were a synonym of «source» or «spring,» and not of «flank» or «declivity,» &c., our boundary-treaties would be little less than unintelligible. However, certain Chilian writers strenuously endeavour to uphold that the hard stone and granite of the slanting surfaces of the Andes are merely flowing waters or such as gush out of the rock, when they maintain that *vertientes* are nothing but «sources.» They imagine that such an extraordinary assertion favours what I would fain call their «hydrological efforts.» The large number of authorities on whom note N°. 6 of the translation is founded, will nevertheless clearly demonstrate that, for said Chilian writers it would be as diffi-

cult to upset the solid foundations of truth, of science and of the Spanish language, as to turn the gigantic mass of the Andes into a liquid plain. (V. notes 6 and 20).

CREST.

§ 8.—In some writings it is easily noticed that the word «summit» is indifferently used: in some cases, in the sense of a high point, such as the crown of a volcanic cone or the very top of a mountain, and in others, as the comb of a ridge or the sawlike edge of a range, whence the Spanish orographic term *sierra*.

«Summit» is, strictly speaking, the Spanish *cima;* and in English it generally implies a topmost point, a peak or a pinnacle (see note 4). It is thus employed in the translation of the U. S. «Foreign Relations», when they say: «The frontier line is to run over such of the *highest peaks* of said Cordillera as may divide the waters.» The tracing of the boundary line over the highest peaks is a sheer impossibility, firstly: because those peaks may or may not be situated within the principal chain of the Andes; and secondly: because most of them do not divide the waters of said main range, which are the two conditions exacted by art. 1 of the treaty of 1881 and arts. 1 and 2 of the protocol of 1893.

§ 9.—Both the Argentine and the Chilian experts construe the treaties as herein stated. Mr. Barros Arana in the record of the proceedings of the 29th August 1898 expounds that the boundary line proposed by him «leaves within the territory of each of the two nations *the peaks,* ridges or ranges, however high they may be, which do not divide the waters *of the river-systems,* etc. It is true the gentleman forgets in this instance the orographic condition of the treaties: said peaks and ridges are not on the line of the crest watershed, while others rise far from the principal chain of the Andes. In making this omission he only shows his partiality for river-basins,—a liquefying propensity which prompts him to turn slopes into sources, and to

pursue with his line the watercourses which have a definitely eastern and Pampean origin.

Yet this is neither here nor there, and the fact is that both the Argentine and the Chilian governments have without any difficulty whatever approved that part of the boundary line, which leaves peaks Mercedario and Aconcagua, to the east of the crest watershed of the main range. It was their duty to do so.

§ 10.—The reasons for thus proceeding are obvious; in a cordillera the peaks are more or less isolated points that fail to show the general direction of the numerous ridges of a huge mountain system, which in some parts is from 20 to 30 leagues wide; whilst the *cumbres* or crests are the culminating lines,—the *arêtes* or *crêtes*, as the French call them,—which clearly indicate the axial trend of said mountain-system.

§ 11.—The following passage, due to Mr. Alexander Bertrand's able pen, corroborates my assertions: «If for one who contem-« plates from afar a chain or a group of mountains, their *cum-« bres* affect the form of a crest or of a continuons edge which « defines with the intersection of its opposite slopes *(laderas « opuestas)* the parting of the waters,—for the topographer who « surveys them the configuration of the ground is far from pre-« senting that aspect of simplicity. The edges and crests are « numerous; the *cumbres,* instead of trending in one line, are « disseminated throughout a wide zone.

« The expressions «the most elevated points» *(los puntos más « encumbrados),* «the highest *cumbres,*» «the dominant crest» « *(la cresta dominante),* absolutely lose then their value» *(sic),* « and refer exclusively to the only basis acknowledged by the « topographer, namely: *the course of the waters.*» *(Estudio Técnico para la demarcación de límites,* p. 32).

The books on topography in my library uphold no such tenets. The above may be a Chilian topographic doctrine, which involves a most marked tendency to do away with the Andes, thus eliminating, root and all, the very basis of the boundary treaties.

This kind of science offers very ambiguous and dang
lopments. I would rather adhere to the old and well
teachings of English, German and Spanish professors. With
them, at least, the treaties are safe.

§ 12.—That the word «summit» easily misleads, is shown in Mr. Elisée Reclus' commentary on the treaty of 1881. The celebrated French geographer says: «Pour ce qui est de la lon-«gue frontière des Andes, qui court du nord au sud des deux «Etats, le texte même du traité donne lieu à des interpretations «diverses. Il stipule en effet *que la ligne de partage se déce-«loppe sur les plus hauts* SOMMETS *qui marquent le faite des* «VERSANTS. Mais le tracé qui saute de *cime en cime* ne se «confond nullement avec celui qui sépare les deux PENTES oppo-«sées d'écoulement. Ainsi pour n'en citer qu'un example: à «laquelle des deux républiques appartiendra l'Aconcagua, le «géant des monts américains? Si la ligne frontière suit les «plus hautes crêtes, elle passera sur le dôme de cette montagne, «qui déviendra la borne internationale. Si la limite doit coinci-«der avec le faite de séparation entre les versants, la masse «entière de l'Aconcagua se trouvera en territoire argentin.» (*Nouvelle Geógraphie Universelle*, vol. XVIII, p. 696).

The distinguished author, when writing the above lines, laboured under the mistake that the frontier line was to run over the highest summits,—*les plus hauts sommets*,—which mark the culminating line of the slopes (*pentes, versants*); and he judiciously remarks that a tracing which is to jump from heigh to height is nowise the watershed separating the opposite deci vities. He therefore concludes that, in such a case, the divisi nal line must pass over the dome of the Aconcagua; but, adds, if the line is to coincide with the divide of the slopes, entire mass of the Aconcagua will remain on Argentine te tory.

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N° 138. — L'ACONCAGUA ET LA CUMBRE.

d'après Guestrot

C. Perron

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«giant of the Andes» offered no room for doubts or problems such as the one which seems to perplex him.

On page 715 of the same volume he gives the map of a portion of the main range of the Andes with its crest watershed, marking also the gorge of Valle Hermoso, the well known cumbre pass of Iglesia and the situation of the Aconcagua. Said map has been prepared with data taken from the works of Messrs. Güssfeldt and Pissis, the official explorer employed by the Chilian Government. The copy I add to these pages is as faithful a one as photography can give.

The Aconcagua remains to the east of the boundary line, and the experts never questioned the point; because, the gigantic cone, although within the principal chain of the Andes, constitutes no part of the watershed of the main range.

§ 28.—Mr. Reclus' involuntary error,—if I may call it so,—is in a way rectified by the section photographed from M. Barros Arana's map officially published in Chili as containiug «the boundary lines between said republic and the Argentine.»

I beg to observe that, in said map, the almost total disappearance of the Andes, naturally prevents the reader from acquiring even a vague notion of the distinctly mountainous region which separates the Argentine Republic from Chili and which has not the faintest resemblance to the admirable succession of hydrographic basins exhibited in that map. It may be clear enough for its purpose, but it certainly fails to give anything like a faithful idea of the ground or its nature. In map drawing, therefore, as in topography, I prefer the old masters. Y believe the mere rapid comparison of said map with that of Mr. Reclus, (Pissis), justifies my taste.

The Chilian experts map reminds me of Dido's geodesic feat. She was only granted as much land as could come within the compass of a bullock's hide. She cunninghy cut the skin into very thin strips, and thus managed to encompass a good many acres. The substance of the hide remained: it had only taken

a particular form which allowed the acquisition of a vast area of African territory.

The treaties grant Chili all the land that lies west of the crest watershed of the main range of the Andes. Said main range, in spite of transandine topography, remains substantially what it always has been: a colossal mountain mass, towering aloft with its snow-capped heights,—only, in the map alluded to, it has disappeared as such and has been transformed into a savannah embroidered, so to say, with a surprising succession of rills, rivulets, rivers and drainage areas with a corresponding area of catchment of 100.000 kilometers of Argentine territory. The Carthaginian feat above cited is nothing, when compared with this wonderful *liquidation* of the Andes.

Nevertheless, the Chilian expert imperturbably maintains that, it is his Argentine colleague who strives to «deliver» to his own country the above respectable area. (v. BARROS ARANA, « *La cuestión de límites entre Chile y la República Argentina* », Santiago 1898, p. VII). The Argentine Republic requires no delivery of what she has been in possession since 1810, long before the specious argument of the «continental divide» was invented by said gentleman.

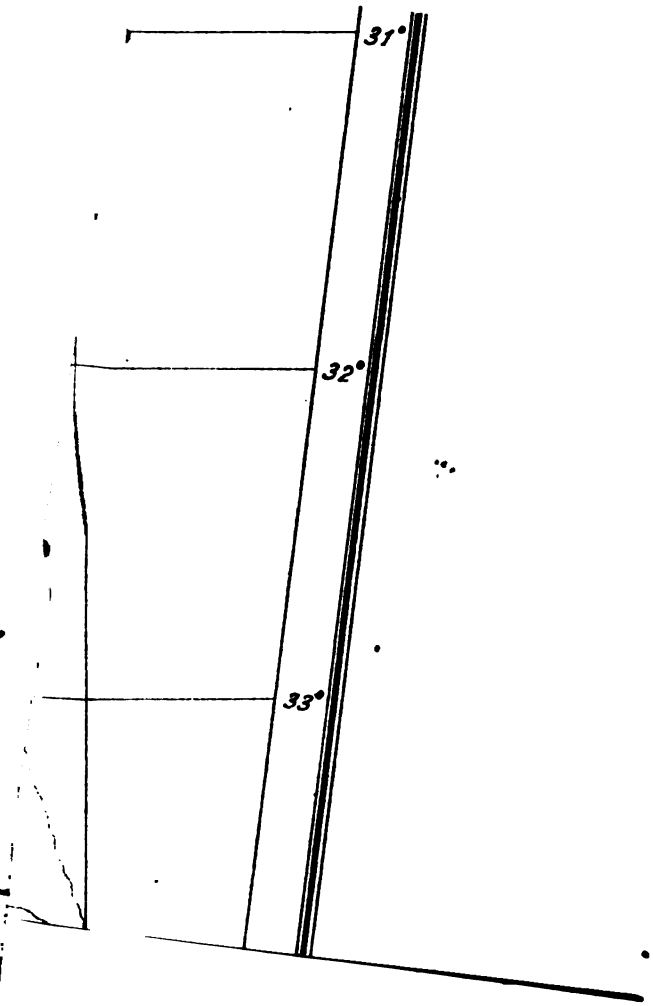
§ 13 *bis*.—The following lines are a commentary worthy of the «hydrological» map above mentioned:

« *Que, para el trazado de la línea fronteriza se ha atendido*
« *única y exclusivamente al principio de demarcación establecido en la cláusula primera del tratado de 1881, principio*
« *que debe ser también la norma invariable de los procedimientos de los peritos, según el protocolo de 1893.* »

That for the tracing of the frontier line, the principle of demarcation established in clause first of the treaty of 1881 has been SOLELY AND EXCLUSIVELY borne in mind, a principle which should also be the invariable rule of the proceedings of the experts, according to the protocol of 1893.

« *Que, en consecuencia, la línea fronteriza que (el perito chi-*

That, consequently, the frontier line which he (the Chilian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« *leno) propone pasa por todas las cumbres más elevadas de*
expert) proposes passes over all the most elevated crests of
« *los Andes que divide las aguas y va separando constantemente*
the Andes which divide the waters and goes on constantly
« *las* VERTIENTES DE LOS RIOS QUE PERTENECEN Á UNO Y OTRO
separating the slopes of the rivers which belong to either
« PAÍS. »
country.

The principle that has been « solely and exclusively borne in mind » by the Chilian expert, is that of his own private affection for river basins. His line does not run along high crests of any kind when it is traced in our Patagonian tablelands. Moreover the treaty of 1881 does not speak of «the Andes which divides the waters», but of «the most elevated crests that may do so». Neither said treaty nor the protocol of 1893 mention the «*slopes of the rivers which belong* to either country». They speak of «the slopes which descend one side and the other» of the crest watershed of the main range of the Andes.

Rivers have no slopes: they have beds, and these may have sloping banks. The Chilian professor of Physical Geography knows all that; but does he pretend to give the word *vertientes* the meaning of springs or sources, in spite of his own printed definitions of that Spanish orographic term (v. note 6)? As he cannot, *per se et ante se,* change the traditional and present meaning of Castillian words, I will simply say with the jurists that,—*allegans contraria non est audiendus* — « he is not to be heard who alleges things contradictory to each other ». (BROOM'S, « *Legal Maxims* », p. 169, ed. 1870).

« *Que, si bien en sus partes más extensas é importantes el*
That although in its most extensive AND IMPORTANT PARTS,
« *terreno que recorre la linea divisoria se encuentra suficiente-*
the ground over which the boundary line runs has been suffi-
« *mente reconocido y aun prolijamente levantado, como así*
ciently reconnoitred and even carefully surveyed, just as the
« *mismo se halla bien establecida, en general, la dependencia*

hydrographic dependency of the rivers and streams which flow
« *hidrogáfica de los ríos y arroyos que se desprenden hacia*
down both sides has likewise been. IN GENERAL, well establi-
« *ambos lados, debe, sin embargo, advertir que la ubica-*
shed, HE MUST, NEVERTHELESS, POINT OUT THAT THE TOPOGRA-
« *ción topográfica de la línea propuesta es enteramente in-*
PHIC LOCATION OF THE LINE PROPOSED IS WHOLLY INDEPENDANT
« *dependiente de la exactitud de los planos; y que, en*
OF THE EXACTNESS OF THE MAPS; and that he in consequence
« *esta virtud, declara que dicha línea no es otra que la divi-*
declares that said line is no other than the natural and effective
« *soria natural y efectiva de las aguas del continente Sud-*
WATERSHED OF THE SOUTH-AMERICAN CONTINENT, between pa-
« *americano entre los paralelos 26°, 52', 45" y 52°, la que*
rallels 26°, 52', 45" and 52°, which can be demarked on the
« *puede ser demarcada en el terreno sin efectuar más operacio-*
ground without carrying out other topographic operations than
« *nes topográficas que las necesarias para determinar cual sería*
those necessary for determining which would be the course
« *el curso de las aguas allí donde estas no corren materialmente.* »
of the waters there where they do not actually run.

§ 14.—Evidently for the Chilian expert the « important part » of his line is not where it follows the crests of the main range. It is therefore to be feared that his otherwise careful surveys are deficient in that region,—*the region of the treaties.*

The «hydrographic dependancy of rivers and streams» is not a matter which the conventions require to be defined. The watershed of the main range of the principal chain is independant of all that, as it may cut rivers as provided by the stipulations of 1881 and 93.

What his maps may be worth remains a most doubful question, after the astounding declaration that their accuracy is completely independant of the topographic location of the line.

In fact, it seems to be no real line at all. It is left to nature. So far, it only appears to be the imaginary or as yet unmapped

«continental divide», with which the treaties have nothing whatever to do.

I must however acknowledge that the vague way in which the Chilian expert indicates his line, is an act of prudence on his part, as, before he actually fixes it on the ground many a shifting may have taken place on account of the landslips of the mountains, the power of storms, winds and heavy rainfalls, the avalanches and atmospheric accidents which are continually acting upon waterpartings that are not sierras. I will no longer dwell on this subject, as I can confidently refer Y. E. to the numerous authorities quoted in notes 4 and 6 of the translation which I have laid before the Department of Foreign Affairs.

WATERSHED.

§ 15.—In order to study the import of words and the drift of phrases which are repeatedly made use of in the documents before me, I have grouped them with reference to their mutual relations, as follows:

The boundary between Argentina and Chili, from N. to S., is the Cordillera of the Andes (art. 1, treaty 1881, and art. 1, protocol 1893); the *divortium aquarum* of the Andes is the watershed formed by the most elevated crests or cumbres of the main range of said Cordillera (art. 1 and 2, treaty 1881, and articles 1 and 2, protocol 1893); in every case, the international boundary defined by the treaty of 1881 is to remain immovable between the two republics, and that boundary is no other than the Cordillera de los Andes, *ut supra* (art. 6, treaty 1881, and preamble of agreement, 1896); the *línea divisoria de las aguas* or the watershed of the most elevated crests, must be the one of the principal chain of the Cordillera of the Andes (art. 1, treaty 1881, and arts. 1, 2 and 3, protocol 1893); the demarcation shall be made in the Cordillera de los Andes (arts. 5, 1 and 2, protocol 1893); landmarks wrongly placed in the Cordillera de los Andes shall be moved therein to the right spots (art. 8, protocol 1893); the operations of demarcation shall extend

in the Cordillera de los Andes between parallel 23° latitud S. and 26°, 52', 45", &c. (art. 1, agreement 1896); the boundary marks are to be placed in the Cordillera de los Andes art. 2, agreement 1896); and finally the sub-commissions shall work in the Cordillera de los Andes (art. 1, record of the experts, 1st May 1897).

The above provisions undoubtedly indicate an orographic limit, and it requires a marvellous power of ready invention to make them appear as a hydrographic definition of watercourses. Both treaties begin by declaring that the boundary is the Cordillera of the Andes, which is not water: it presents all the appearances of a solid mountain system, As long as the watershed of the highest crests of said Cordillera corresponds exactly with the «immovable boundary,» the tracing of the latter is to follow said high divide. But, when the watershed ceases to be that of the above crests and also swerves from the main range, then we are not directed by the treaties to perplex ourselves with the intrincate edges of river-basins or to complicate the surveys still more with the interesting yet unsuitable divides of ocean drainage areas: on the contrary, we are emphatically told to apply articles 1 and 2 of the protocol of 93, which most decidedly save the immovability of the international boundary.

§ 16.—Two questions arise here:—1ª Which is the principal chain of the Cordillera de los Andes?—2ª What is a *línea divisoria de las aguas* or a watershed, and what kind of watershed is the one of said main range?

The first question is anwered by Mr. Barros Arana: «As principal chain of a group of mountains or of a mountain system is to be considered the one which sheds down its flanks or sides the greater quantity of water, feeding great rivers.» («Elementos de Geografia Física,» pag. 46, Ed. 1888).

§ 17.—The second question has been partly replied to in note N°. 9 by British, French and Spanish writers. I will now appeal to German authors. I find that, when watersheds are scienti-

fically studied and duly classified, the truth of my preceding statements asserts itself without any difficulty.

The word watershed comes from the German *Wasser*—water and *scheiden*—to part or divide.

a) WASSERSCHEIDE is also equivalent to «water-parting», «divide», *divortium aquarum*, although the latter words refer to old theories which have been laid aside and bring us back to the times when maps were easily and rapidly prepared by drawing a ridge of hills between every two rivers or streams that had neighbouring sources. I have also come across the compound word «water-divide» in some papers; but it is pleonastic, though grammatically coined. Since a divide signifies a line which separates the *waters*, why uselessly couple it with the very same word? Neither Webster's, nor the Standard, nor the Century dictionaries register the expression «water-divide.»

Some of the authors quoted in note 9 define a watershed as the limit between two hydrographic basins; but Prof. Alfred Phillipson rejects this definition as not scientific, adducing very plausible reasons; and he accepts a broader one (similar to Hughes' and Tarr's as given in §§ 107 and 109) that applies to slight elevations of the ground and to cordilleran mountain masses, to insignificant rivulets and to the greatest rivers,—which, though differing in size and importance, are nevertheless subject to the same laws. A watershed «is every line that separates from each other two different directions of the superficial drainage of the waters,» *(Jede Linie, welche zwei verschiedene Richtungen des oberflächlichen Abflusses der Gewässer von einander scheidet)*, or, in other words: «every line in which the upper part of two different directions of the earth's surface cut each other» *(Jede Linie, in der sich zwei Gefällsrichtungen der Erdoberfläche nach oben zuschneiden)*. A watershed is the line of intersection of two slopes or inclined surfaces. Hence the watershed of the main range of the Cordillera de los Andes is the culminating line formed by the intersection of its eastern and

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western declivities, over which the meteoric waters flow down in opposite directions into the valleys. (v. § 72).

The treaties expressly refer to the watershed of the most elevated crests of the principal chain of the Andes *(ut supra)*; but they never allude to such low divides as will be dealt with hereafter. (A. PHILLIPSON—«*Studien über Wasserscheiden.*»—*Einleitende Bemerkungen.)*

That central Andean divide is what the Germans call a:

b) LOKALWASSERSCHEIDE or local watershed; because it is not a general or continental waterparting or great divide, a phenomenon regarding which the treaties reveal no interest, as their object is not the study of the relief of the earth's surface, but simply that of the lofty barrier which stands between the two nations.

A local watershed is not only not continental, it is not even a principal one in the scientific sense of the word: it is only *regional,* as it affects but one section of the country,—in our case: the mountainous region which separates Argentina from Chili.

It is impossible to deny with anything like a shadow of reason that, the frontier line of the conventions is localized within the main range of the Cordillera de los Andes. (Art. 2, Protocol 1893).

Moreover, a treaty and a protocol that begin by stating the Andes are from N. to S. our international boundary; that distinctly provide the frontier line shall follow «the most elevated crests that may divide the waters and pass between the slopes that descend east and west,» clearly classify the limit as a:

c) KAMMWASSERSCHEIDE or crest (or comb) watershed. This is the waterparting of the summit line,—*la ligne de faite,*—the one that runs along the crests of high mountains, and in our case is due to the intersection of the eastern and western declivities of the main range of the Cordillera de los Andes. The treaties leave no room for doubts: it is the culminating edge of the sierras of the principal chain, which affects the same axial trend of the whole system from north to south.

«As a normal watershed,» says Richtofen, «is to be indicated the one which coincides in all its extent, or in its greater part, with the principal crest line of a mountain range.» *(«Als normale Wasserscheide ist diejenige zu bezeichnen, welche mit der Hauptkammlinie eines Gebirges in deren ganzen Erstreckung, oder doch grossentheils, zusammenfällt»).*

That the treaties have sought for something normal and immovable as a boundary, is repeatedly inculcated in them, and, that they can find it nowhere better than in the Andes is an unquestionable fact. Hence their localizing the frontier line in the main range of the cordillera and their developing it along the cumbres that part the waters. This regional, local, crest watershed is not a:

d) HAUPTWASSERSCHEIDE, a principal watershed (v. § 113 Brockhaus' definition), i. e. a continental divide as the Chilian expert would have it. The treaties enjoin the experts to study, within a given space of mountainous territory, the tracing of a limit between *two nations:* they do not require them to map out the limit between *two marine or ocean basins.* The conventions do not order the experts to busy themselves with the general physical geography of the two countries: their topographic task lies within a well defined region, where they are sure to find what the treaties, together with the men of science, consider the most regular and best of divides, namely: the «Kammwasserscheide,» the crest watershed of a decidedly local character.

Such local waterpartings are quite different from the principal ones which deal with the larger portions of the earth's surface and help to describe it. That is what Prof. Siegmund Günther says:—«We place the *Hauptwasserscheiden* or principal watersheds of a larger part of the earth's surface, for instance of a continent, in contrast with the *Lokalwasserscheiden* or local watersheds, which are to be geographically explored in an especial map. *(« Wir stellen die Hauptwasserscheiden eines grösseren Theiles der Erdoberfläche, eines Kontinentes, z. B., den nur*

in der Spezialkarte geographisch zu erforschenden Lokalwasserscheiden gegenüber».) These watersheds, he adds, help to define the earth's surface. *(«Lehrbuch der physicalischen Geographie,»* p. 445.)

A continental divide may be formed of more than one class of watersheds: beginning at the high edges of sierras, it may pass through valleys, cross morasses or swamps out of which issue streams in opposite directions, thread its way now over mountain heights, now over the mere swellings of a plain, and so on. In such cases, the local water-partings are not taken into account unless they coincide with the principal divide. Thus, the continental slope, which sinks from the snow-capped Andes to the level of the sea, is much more gradual than that which is peculiar to the main range of the cordillera. And thus also it is that, the watershed of said main range may be its highest crests, and pass betwen the slopes that fall either side, whilst the continental divide sometimes may trend along the crest alluded to and sometimes, taking a much lower level, may run between the springs or sources of the rivers it separates.

There is no possible way of evading the logical result: our boundary line is, conformably with the treaties, a high mountain divide, a crest watershed.

In the conventions the:

e) THALWASSERSCHEIDE or valley watershed has no importance. This is a divide which takes place in a longitudinal valley, in the mountains (Längsthal).

Still less important, and also less characterized, is the:

f) FLACHLANDWASSERSCHEIDE,—the flat land watershed, caused by divisionary regions which are so entirely undefined that the traveller crosses them without feeling the sensation of an upward or downward movement.

The classical land of such watersheds is Africa, where, according to Günther, it is most difficult to draw the line that divides the waters. After great difficulties, Casati laid down at last a trustworthy boundary of the river basins of the Congo and the

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Nile. To this must be added that, in the tropics, after heavy showers, during the rainy season, the slightly defined water partings are covered by the floods of inundations, and thus water communications are established between systems which do not belong to each other. (v. GÜNTHER, *op. cit.*, p. 449).

Surely, no one acquainted with the text of the treaties would think that a low-land watershed or a prairie divide are determined and stipulated in those conventions. However, it appears that, by adding the word «continental», the Chilian expert imagines he may attain that end. (v. p. XIV).

§ 18.—The transverse section of the Andes given in front is not altogether ideal. It occurs repeatedly in that form, or in an analogous one, south of parallel 40° S. The sketch shows to what extent the provisions of the treaty would be baffled, nay annulled, by means of a divide which leaves the Andine ranges many a league to the west, and draws the frontier line through a water-parting that occurs at the eastern border of a spacious table-land which happens to separate the waters that flow to the Pacific from those that wend their course to the Atlantic.

When the watershed is not to be found within the main range of the Cordillera de los Andes, the experts cannot abandon the latter and stray away toward the pampas in order to discover where lies the line of separation between two oceanic basins.

If, after due search, they cannot discover the geographic condition of the *divortium aquarum*, they are not allowed to exert their ingeniousness in order to leave the principal chain of the Andes:—they must simply cut rivers with the frontier-line, and see that articles 1 and 2 of the protocol of 1893 are not infringed, as they certainly would be, were the most elevated crests to be substituted by the scarcely perceptible swelling of a Patagonian mesa, from whence the Andes *may not be even visible.*

That rivers must now and then be cut when the frontier line is to follow a crest watershed,—however normal the latter may be,—is proven by the fact that, in the cordilleras of all parts of

the world, there are breaks and gorges, or even transverse valleys (Durchgangsthäler) which cross the ranges from one end to the other, and thus originate what the German authors call:

§ 18.—*g)* EINGREIFENDE WASSERSCHEIDEN, — which I would qualify as invading watersheds, that is to say such as encroach upon the territory lying,—as in our case,—east or west of the normal cordillera divide. Thus, watercourses which begin far east of said line, in comparatively low areas of catchment, force their way to the Atlantic. This fact is of no serious importance, and in no way justifies the violation of the treaties consisting in the adoption of the continental divide in lieu of the cordilleran watershed, which in general separates the waters that flow to the east from those that descend to the west of either country, but which does not always constitute the edge that divides the drainage areas of the Pacific and Atlantic oceans.

Richtofen describes those encroachments of the waters upon Transandine territories in which their sources are not to be found; and he mentions «rivers that, starting from advanced hillocks (Vorhügeln) of the eastern side of the Andes, break through the whole breadth of their ranges».... In Ecuador, he says, where both slopes receive abundant rain, the watersheds break through from either side: «eastern rivers begin on the western and western on the eastern side». In Patagonia, we have the Aysen, the Palena and others in analogous circumstances. Said author considers that such phenomena are, in most cases, the consequence of the victory which a river, favoured by the declivities and the quantity of water (v. *Lapparent's remarks on the effects of the rainfalls on Chilian rivers*, note n. 9), obtains over its rival that pushes its work on the opposite side. This is what G. K. Gilbert calls the «struggle for the watershed», — *Kampf um die Wasserscheide*, — (v. FERD^D. FREIHERR VON RICHTOFEN, *Führer für Forschungsreisende*, § 228, p. 695 to 702).

§ 19.—Some rivers, as noticed by Richtofen, Lapparent and

Col. Church (v. note 9), do struggle for the watershed, and no doubt have caused and are causing considerable shiftings in the south-american continental divide; but the treaties do not lead us to a deep study of alterations which do not affect our general frontier line; and I fail to perceive how their provisions countenance discussions of the boundary question which the Chilian expert turns, on his part, into a «struggle for the continental divide». Such encroaching aberrations, if I may be allowed to call them so, are completely defeated and set aside by articles 1 an 2 of the protocol of 1893.

Strange to say, the Chilian expert gravely upholds that it is his Argentine colleague who «now follows the ridges of moun-«tains, now the pampas *(sic)*; who now selects a high crest, «now disdains it. In some cases, he adheres to *the geographic «condition of the demarcation»*, (v. § 30), «in others he rejects it, *cutting rivers»* (v. § 29 and § 44) «and making a fancy tracing «or one of mere convenience. (v. BARROS ARANA, *La cuestión de límites entre Chile y la República Argentina,* Santiago, 1898, pages VII and VIII).

It is a very well known fact that the Argentine expert has no point of his frontier line in the pampas. On the contrary, he emphatically and repeatedly protests against Mr. Barros Arana's trespassing waterpartings, which, under pretext of the grasping «continental divide», tend to penetrate at large into the Patagonian pampas. On the other hand, when our expert cuts rivers, —which seems to be a misdemeanour committed against the intruding watersheds,—he merely complies with the two provisions above quoted.

Although there is no doubt that the treaties define a crest watershed in such a way that they remind us of the several definitions of authors given here, and in the notes to the translation,—I will however add some remarks on this subject.

THE OROGRAPHIC LIMIT.

§ 20.—It really seems superfluous to remark that the strongly

salient, nay, the absorbing feature of the Andes, is their colossal mountain-ranges, compared to which, the streams that issue from them are insignificant threads that dwindle into mere nothings. and which certainly do not induce us to adopt the vague and unstable edge of their drainage areas as a fixed boundary.

However, the latter idea prevails in recent publications; although such strange notions were not entertained by Chilian statesmen in former years. I appeal to their own testimony.

§ 21.—Mr. Barros Arana, when he was plenipotentiary in Buenos Aires, wrote to Mr. Alfonso, the Chilian Minister of Foreign Affairs, on the 10th July 1876, as follows: — « This go-« vernment (the Argentine) would also desire that, if this pro-« posal (that of compromise) were accepted, and if a definite « treaty were concluded, a general principle should be established « in it to serve for the demarcation of boundaries *in all the « length (en toda la prolongación) of the Cordillera of the Andes.* « This principle, which could be based on the culminating points « of said mountain chain or in the watershed, would serve to « settle the doubts which have arisen or might arise in some « valleys as to the dominion to which both countries might lay « claim. »

24th March 1877, Mr. Alfonso replies to Mr. Barros Arana on the above subject: « The only thing that could be stated in « this respect is, that *whenever the Andes divide territories of « both Republics, the most elevated crests of the cordillera shall « be considered as the line of demarcation between them.* Em-« ploying a wording similar to this, there would be no difficulty « later on, because it would devolve on the arbitrator to decide « where the territories of either nation end ». (v. page 223 of the pamphlet written by Don Gaspar Toro, *La diplomacia chileno-argentina en la cuestión de límites,* Santiago, Chile, 1897).

§ 21 *bis.*—Sixteen years after Mr. G. Toro published his paper, his countryman, Mr. Barros Arana signed the following document:

« *Instructions for the demarcation in the Cordillera of the Andes.* . . . . . .

« *Operations on the ground.*

« ARTICLE 5.—It having been agreed in art, 1 of the protocol « of the 1st of last May that, the experts and the subcommissions « who are to work *in the Cordillera of the Andes* shall observe, « as an invariable rule of their proceedings, the principle estab- « lished in the first part of art. 1 of the treaty of 1881, said sub- « commissions shall investigate in the above mentioned cordillera « *the position of the main range of the Andes, in order to seek* « *therein the most elevated crests that may divide the waters,* « and shall mark in its accessible parts the frontier line, caus- « ing it to pass between the slopes which descend one side and « the other....

« Santiago, 1st January 1894.

(Sgd.) « N. QUIRNO COSTA — DIEGO BARROS ARANA
« *Juan J. Ochagavia* — *Lindor Perez G.*
« Secretary. — Secretary. »

§ 22.—All this shows that both in the Argentine Republic and in Chili (*v.* the latter's Constitution of 1833), the Andes have always been considered as the great natural boundary between the two nations. Their most elevated crests indicate the tracing of the frontier line. The possible exceptions have been foreseen and provided for in the treaties by a principle which confirms the orographic limit against that of river basins which they do not even mention. It is most evident that the high contracting parties adopted what they plainly saw could be a safe guide for the delimitation. They never imagined that the experts were to follow in their operations, instead of the crests that trend along the principal chain of the Andes, the numberless turns and windings of the thousands of small brooks, streams and

mountain torrents which cut their way through the hidden and, up to this moment, mostly unknown gaps, clefts, gullies and ravines, etc., which are comprised within their area of catchment. This fact seems to have weighed so much on Mr. Barros Arana's mind as to make him declare that the map he presented to the Argentine expert was not a reflex of reality. (v. § 13).

§ 23.—It is a well known fact that in the Pyrenees, the Andes and other cordilleras, rivers flow, the sources of which are situated far away from the watershed of the main range or which is peculiar to it. Such rivers are invariably cut by international boundaries; because it would be incongruous to deviate the frontier-line in order to make it cross the distant edge of their drainage areas.

It has been verified that waters which for many leagues flow down the eastern slopes of the Andes, after completely emerging from them, run into the Patagonian territories, where they suddenly turn back to the west, and at a much lower level find their tortuous way to the Pacific through the mountain gorges. There are other waters which start from ridges independant of the principal chain, and even some which originate in the Patagonian plains, far from any mountain,—still both take the same westerly direction until they also disembogue in the Pacific. These facts show the wisdom of choosing a rational and natural boundary that stands out with its imposing features in bold relief, and of discarding a line partly composed of low divides, subject to the changes produced by erosion, the work of torrents and other Andine agents.

§ 24.—We can also most distinctly aver that the signatories of the treaty of 1881 never contemplated a boundary line which would give the Argentines a footing on the Pacific seaboard or open the way for the Chilians to a series of mediterranean or inland Gibraltars, placed as advanced sentinels within the southern territories of our Republic. The enormity of such a political aberration proves its absurdity; and if it ever entered into the heads of impassioned patriots, it was to all intents smothered

and definitely buried by the dignity and good faith of agreements, which have been a guarantee of peace between the two republics.

There is one opinion which I cannot help considering. It also refers to the orographic limit and belongs to a man who deserves my greatest esteem. I will study it in the following paragraph.

THE OPINION OF THE CHILIAN HOME SECRETARY

§ 25.—Much has been written on the following declaration:

« El Gobierno entiende por su límite oriental sólo las altas « cumbres de la cordillera y no otra cosa. » (v. § 21).

« *The Government understands by its eastern boundary only* « *the high crests of the cordillera and nothing else.* »

These words were written by Cárlos Walker Martinez, when he was Envoy Extraordinary and Minister Plenipotentiary for Chili in Bolivia, and who now is the Home Secretary in the Cabinet of said republic.

They are the words of a man whom I respect as an upright, highminded statesman and to whom I am tied by the hoops of steel of a lifelong friendship.

§ 26.—In *El Porvenir*, a daily paper of Santiago, I find in number 7738 of the 27th October 1898, that the above words were taken from a note addressed by Walker Martinez to the Bolivian Government in 1874.

« Never », said he, « has Chili pretended to extend its boun- « daries to the other side of the Cordillera. The Cordillera de « los Andes, which from south to north constitutes its eastern « boundary, will of course continue being its limit as far as pa- « rallel 24°, and the treaty is so explicit on this subject, in its « article 1, that it is necessary not to understand the import of « words in order to suppose that *altas cumbres* or *divortium* « *aquarum* may have any other meaning than the one given them « by language, by science and by common sense. »

After quoting the preceding lines, *El Porvenir* adds: « Thus, Mr. Walker referred to the so very explicit text of article 1 of

the treaty he had just signed with señor Baptista and which ran as follows: "Parallel 24°, from the sea to the Cordillera de los Andes in the *divortium aquarum*, is the boundary between the Republics of Chili and of Bolivia". For Mr. Walker, *altas cumbres* and *divortium aquarum* (1) signified one and the same thing when dealing with a frontier line in a cordillera; and as to the expression *divortium aquarum* employed in the treaty, he referred to what the dictionary, science and common sense understand by it. Moreover, in the report which on the 8th April 1875 Mr. Walker, as Plenipotentiary in Bolivia, addressed to the Minister of Foreign Affairs for Chili, he said:

« There are errors which take root in nations in such a way « that it is impossible to dissipate them. The voice of reason « is then not listened to; the arguments, however strong, have « no power; reasoning becomes useless.

« To this class of errors belonged, in Bolivia, that of the « eastern imaginary boundary, until the treaty succeeded in « putting aside all questions by employing the phrase *divortium* « *aquarum*. If the words *eastern boundaries* of the treaty of 66 « could give rise to the objection of fixing boundaries in an « imaginary line of longitude which, starting from the point of « intersection of the Cordillera de los Andes with parallel 25°, « should follow to the north forming an angle of Bolivian terri- « tory between it and the Andes,—i. e. the so-called eastern boun- « dary,—the new treaty, employing the terms *divortium aquarum*, « cannot give room for any doubt, as there is nobody who does « not know what said words mean. In a cordillera there is « only one *divortium aquarum*, as there are only some *altas* « *cumbres* (high crests) which divide the course of the rivers « in one or the other direction, to the east or to the west.

« The drafting could not be clearer, nor more precise; it was « leisurely meditated with the purpose of leaving no doubt re-

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(1) The treaty of 1881 is still more explicit, it says: the «*divortium aquarum* of THE ANDES» (v. Art. 2, page 6).

« garding the sense which the authors wished to give to their « article. Señor Baptista accepted it without hesitating, thus « leaving the discussion,—if it ever were possible over so clear « a question,—to bad intentioned or willingly ignorant people.»

§ 27.—So would I have accepted it without the least hesitation, especially when a loyal man openly and categorically declared to me: « that Chili has never pretended to extend its boundaries to the other side of the Cordillera ». It is not the innocent *divortium aquarum, alias, línea divisoria de las aguas* or watershed, that is doing mischief:—it is the subtle and misleading word «continental» that, in our case and given the text of our treaties, is playing havoc with « the dictionaries, with science and with common sense ».

I know Señor Baptista well, and I admire his talent, his great learning and his keen intelligence. Had he been requested to subscribe the *continental divide* instead of the simple *div. aq. of the Andes*, I am sure he would certainly and also sternly have rejected the idea, *in limine;* because he would have seen through the proposal and been quite aware that acquiescence meant foolishly placing in his colleague's hands a picklock so that Chilians might quietly open the solid Andean gates and penetrate by stealth into Bolivian territory. I am also positively sure of one other thing, namely: that Cárlos Walker Martinez would not have made such a proposal after making his declaration concerning the cordilleran limit. Never! I avail myself of of this opportunity of defending him in public, as I have often done in private, whatever may be said or thought by some of my countrymen who discover hostility where I only think there is an energetic, frank and perhaps too outspoken man. The boundary question does not blind me.

§ 28.—But, let us now return to *El Porvenir's* last paragraphs:

« And, in sustaining what he then sustained, or in defending what he now defends, when he maintains that: the highest crests *(las cumbres más altas),* the most elevated points *(los*

puntos más encumbrados), the anticlinal line *(la línea anticlinal)*, the dominant edge *(la arista dominante)*, the main range *(el encadenamiento principal)*, and any other such expressions, referring to a cordillera or mountain chain as the delimitation between two nations, have always signified and do signify the same as *continental divortium aquarum* [1], Mr. Walker Martinez was and is perfectly in accordance with geographical language, with international jurisprudence, with the resolutions passed in the Congress of Berlin and with the antecedents of Chilian-Argéntine negotiations prior to 1881. »

§ 29.—In the word «continental»—there is the rub.

Geographically speaking, there is a very great difference between the «*div. aq.* of the Andes» and the «continental divide». The former separates two neighbouring countries,—the latter two interoceanic basins. The first leaves no gap for diplomatic trespassers, whilst the second opens for them a passage through every transverse break of the Andes. The Andine watershed shuts out all foreign intruders: the Barros Arana continental divide offers them a passage through every series of gullies, defiles and gorges that cut the Andes in twain, through every watercourse which thereby or on account of past and future erosions may have found or may find its way into Argentine territories, and therein extend their areas of catchment. The one secures an immovable frontier, the other traces only a doubtful and shifty border (v. §§ 18, 19).

Politically speaking, the line of the treaties guarantee to either nation, for perpetuity, a peaceful jurisdiction over their respective lands. The other one prepares a precarious, a continually threatened sovereignty in certain points;—it is indeed a demarcation fraught with future troubles and angry frictions.

§ 30. — « International jurisprudence » does not favour the theory I impugn. On the contrary, it is decidedly against it.

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[1] Compare these straightforward expressions with Mr. Bertrand's exaggerated views (§ 11 page IX).

Beginning with the treaty of Berlin (13th July 1878) and some of its commentaries, which I have read with care, there is nothing that justifies its being cited in favour of the « encroaching watersheds ». Nothing will be found in said document that could guide us in our own international delimitation. No general rules, no set of principles are therein laid down which could serve our purposes in any way.

Let any reader follow, on a map of Europe, the boundaries fixed by the signatory powers (England, France, Germany, Austria, Italy, Russia and Turkey): he will certainly fail to discover anything practically bearing on our own fixing of a frontier line; unless it be that now and then those limits cut river-basins in a straight line, slant through valleys, take the shortest cuts, cross lakes and rivers; and yet, they are anything but similar to the crest watershed of our treaties, although sometimes they follow anticlinal lines of the Balkans and other mountains, whether they be continental divides or not, they follow thalwegs, they follow rivers, they follow in fact almost every possible shape or form of the earth's surface.

I am not speaking by heart: I have the treaty before me.

Art. 2 deals with the limits of Bulgaria. The line starts along the right bank of the Danube, from the old Servian boundary to a point eastward of Silistria and thence goes toward the Black Sea, south of Mangalia; thence it ascends from the embouchure a thalweg of a rivulet, crosses obliquely a valley,.... strikes a crest at a point between Fekenelik and Aïdosbridja, and reaches Demir Capon; continues along the crest of the main range of the Great Balkan up to Kosica summit, where it abandons it in a southward direction; trends along the course of various streams and thence over the watershed between the Smowskio-Deré and the Kamenica up to the height of Voinjak,... *cuts in a straight line the upper basin of* Ichtiman-Deré, until it finds again the divide between the Isker and Marica basins; hence it follows now fluvial waterpartings, now crests, now mountain spurs, now valleys until it strikes south of Jelesnica, in order

to reach *by the shortest cut* («par la ligne la plus courte)» the chain of Golema Planina at the summit of Gitka, &c.

Art. 13 refers to the boundaries of east Roumelia. The line presents much the same variety of geographical nomenclature.

Art. 58 defines the limits of Asiatic Turkey. It also starts from the Black Sea.... it stretches *in a straight line* up to river Tchorouk, *crosses said river*.... from Medjingert it continues again *in a straight line* towards the mountain top of Kassadagh and trends along the watershed of the Araxe and the Mourad-Sou up to the old Russian border.

Art. 28 determines the boundaries of Montenegro and we find analogous tracings; *it crosses rivers like the Piva and cuts lakes* like the one near the islet Gorica Topel, &c.

Art. 38 offers us another specimen of more or less the same kind of boundaries for Servia: crests, watersheds, high or low, *cuttings of rivers such as the Morawa* and roads as the one that connects Sofia with Pirot.

Arts. 45-46 show that, for Roumania, the tracing of the frontier line is not adjusted to any rules resembling that of the treaties of 81 and 93. The Roumanian boundaries are thalwegs aud lines which were to be ultimately defined by the European Commission for the delimitation of Bulgaria (*v.* B. Brunswik, «*Le traité de Berlin*»).

All said boundaries have nothing in common with our grand, unique Andean limit, which is one exclusive main range not to be easily mistaken for the multitudinous kinds of borders indicated for the above countries.

The international precedents: of Bohemia that has one of its boundaries, the Erz ranges, cut through by the Elba; of France and Spain bounded by the Pyrenees through which flow the Garonne and the Segre, and many others, show that the assertion above transcribed is utterly untenable.

§ 31.—Regarding language and dictionaries, I beg to refer to §§ 54-60 and note 9 and, as far as negotiations prior to 1881 are concerned, to §§ 20-22.

§ 32.—I admit, what I have stated in § 5, that the Andean watershed of the treaties divides, not only meteoric, but all kinds of waters flowing down the slopes of the Andes.

I acknowledge,—in fact I have explained that every mound, every hillock, every eminence however low, every pass, every cone, every ridge bears a watershed on its upmost part, according to Richtofen's definition (v. § 17). Still we can only admit the crest watershed of the main range as the conventional boundary; because that is the one determined by the treaties and it presents an unmistakable character. And finally I have declared that, with all readiness, I would have accepted what Señor Baptista accepted, i. e. what Walker Martinez proposed to Bolivia.

§ 33.—Where then lies the difference of opinion?

It is not difficult to answer.

Generally, normally, the crest watersheds of great mountain systems divide continental waters; *but not always, not along all their length;* therefore the difficulty, or, more correctly expressed, the exception only arises when they do not (v. §§ 18, 19).

When the Andean crest watershed of the treaties happens not to part the waters, the Chilian expert deserts the main range, descends the Argentine slope, loses sight of the Andes, follows a watercourse through ridges independant of the cordillera, reaches a low Patagonian mesa, perhaps even a pampa, and still keeps to the stream or brook in view, until he comes to the respective sources, where he informs us that there we have the.... continental divide!

No doubt; but is that the high mountain divide of the conventions? If so, where are the Andes? Where lie their most elevated crests? Where is their main range?

They are not even in sight, and, if they are, one can only see them at a long hazy distance of many a league, far away to the west.

§ 34.—For instance: in the plains of Maiten, we find the continental divide separating the river basin of the Chubut from

that of the Puelo and Palena, and there is no difficulty in seeing that the waters have traversed the Andes, starting from a drainage area situated to the east of the former in Argentine territory. Chilian writers confirm my statement (v. § 114).

Another case of Andine transverse breaks is that of the lakes and watercourses originated, it is said, by the river Ftaleufú. Here the continental divide is found even more to the east in the Pampa de Esguel and Bajada Nahuel-Pan. And the most striking case of all, is that of lakes La Plata and Fontana which lie across the cordillera, in the vicinity of parallel 45° lat. S. Here the *div. aq.* of the main range coincides with the westernmost edges of lake La Plata; but thence the interoceanic divide abandons the main range and swerves back about 30 miles, south-easterly, and in order to apply the treaties as the Chilian expert pretends, we should have to admit that *mountain ranges* are synonyms of the *plains* and *pampas* like that of Goichel into which he descends in hot pursuit of the sources of the river Aysen.

Surely, if we follow the continental divide we remain subject to the caprices of wild nature, not to the dictates of reason and to the solemn covenants which both nations have pledged their honour and good faith to fulfill.

§ 34 *bis*. Let us however consider the following argument:— « Common sense, let alone topography, teaches us that we cannot « speak of a *water divide that lets the water pass, even if it is* « *by a single gap;* the essential characteristic of a water divide « is that of dividing the waters within the whole region where « it bears that name; the moment it lets the water pass by a « single gap, *as high as the crests may be, it ceases to be a water* « *divide,* (1) and no more serves the purposes of a water divide « than a bottomless cask serves to hold liquid, however strong « might be its sides.» (2)

(1) Yet it may continue being a *boundary*, and that is all we ask. The divide of the Pyrenees, of the Balkans and of the Erz mountains, all have gaps, and yet those three ranges constitute most excellent limits.

(2) The above paragraph is not a translation: it is copied *ad pedem literæ* from page 56, note 12, of a pamphlet published in Valparaiso, as a reply

The comparison is as bad as the cask: neither will «hold water.»

A cordillera may now and then cease being a divide, i. e.: may allow water to pass through it, and yet continue being a magnificent, unchangeable boundary,

Nobody expects the Andes to be a totally uninterrupted cordillera. We are perfectly satisfied that it does divide the waters in the greater part of is length (v. § 17).

Endless disputes come from the confusion of ideas: let us not then confound what the Chilian Boundary Office calls a «water divide» with what the treaties call a frontier line,—above all let us not blend together, as Chilian writers generally do, the conventional boundary with the continental divide.

The latter obeys no laws but those of nature: it therefore follows all the violent movements and all the bendings and all the fitful meanderings of water courses, whether they plunge foaming down a precipice, skirt the base of a mountain, flow rapidly in a deep ravine or gently glide over flat grounds.

The boundary, on the contrary, is subject to human laws:—the treaties; and it must be the result of their fulfillment and not solely the issue of the combination of natural phenomena. It must separate two nations according *to their will*, as stated in the conventions, and not two seas *according to the action of blind forces*, as described in the books on physical geography.

The frontier line cannot depart from the main range of the Andes, although it may generally follow within the latter the continental divide; but it cannot, for example, suddenly leave the high crests of the treaties and sweep down to the plains of Maiten or Esguel, simply because the Chilian expert discovers there what he declares to be the sources of certain rivers with

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to one written by the Argentine vice-consul, F. P. Hansen, in Liverpool. Both papers lack the authorization of the respective governments; however the Chilian pamphlet bears the following title:—«THE BOUNDARY QUESTION BETWEEN CHILI AND THE ARGENTINE REPUBLIC.—*Memorandum on certain capital points,* DRAWN AT THE CHILIAN BOUNDARY OFFICE.—*Annotations to an Argentine pamphlet published in Liverpool by F. P. Hansen*».

a westerly course. We have not agreed to search for the origins of rivers: we have solemnly bound ourselves to remain within the region clearly indicated in our international agreements.

Numerous European treaties are based on the very same principle; and they afford us conclusive evidence in our favour.

§ 35.—As long as the main range acts as the watershed of the treaties, and divides the waters that flow east from those that flow west, there is no possible question.

The real intention has been so convincingly couched in the treaties that, in spite of deceptive translations, we have nothing to fear from impartial judgments.

1) What lands belong to Chili and what to the Argentine Republic?

«In the opinion of the respective governments, and according to the spirit of the boundary treaties, the Argentine Republic retains its dominion and sovereignty over all the territory that extends *from the east of the principal chain of the Andes* to the coast of the Atlantic, just as the Republic of Chili over the western territory to the coasts of the Pacific» (v. page 27).

This solemn declaration of art. 2 of the protocol of 1893 is a just and most explicit answer.

In every civilized country the sovereign of the land is also the sovereign of the waters: if you delimit the first, there can be no doubt about the second; yet Chili raises a question concerning the latter.

When, a) the principal chain of the Andes does not divide the waters, or b) when instead of dividing them, the main range itself is divided by said waters,—to whom do they belong?

«They are all ours, if they flow towards the Pacific», the Chilian expert would reply; «because, having solely and exclusively followed the principle which we are to hold as an invariable rule of our proceedings, we have sufficiently reconnoitred and prolixly searched on the ground for the geographical condition of the demarcation, and discovered that the continental *divortium aquarum* passes between the sources of the rivers which

belong to either country and thus determines the frontier line, —the natural and effective watershed of the South American Continent,—which runs along the crests of the Andes that divides the waters» (v. Record of the Proceedings of the experts, 29th August 1898).

1) «The invariable rule», we reply, «is not for exploring the continental divide, but for tracing the boundary which shall run along the highest crests that may divide the waters *within the main range of the Cordillera de los Andes.* The frontier line must therefore *cut in a straight line* any watercourses that flow *across* the cordillera, whatever springs, sources, swamps, morasses, &c,—lying outside its principal chain,—may feed the rivers of either country.

I cannot conceive how it is possible to pretend that the flagrant violation of the treaties, implied in the above levelling of the main range, will do as well as the faithful compliance with them involved in our reply, unless we repute valleys and prairies as equivalents of sierras and mountains.

§ 36.—I know of a possible reply. It has already been more than insinuated: —«where you only see plains, there we have the dizzy summits and the dark brows of the cordillera!»

Were this so, it would appear we do not require an arbitrator to point out to us where lies the lofty boundary from whose snowy heights the giants and monarchs of the Andes overlook both nations; but that we only need an arbitrator in order that he may tell us..... which of our respective assessors speak the truth (*v.* ENRIQUE S. DELLACHAUX, «*Límites occidentales de la República Argentina,* p. 49).

We might harbour some doubts concerning the definition of the line where the Cordillera dips into the channels of the Pacific, or regarding valleys in its bifurcation, &c., but miles away from the main range of the Andes, not the slightest hesitation is possible. Nevertheless, in the 3d record of the proceedings of the plenipotentiaries in Santiago (v. p. 57), we read that Dr. Piñero invites the Chilian Government to reconsider some 70 or 80 points.

and stretches of Mr. Barros Arana's proposed frontier-line, after a further reconnaissance or survey; because said numbers *are neither situated in the Cordillera de los Andes as ordered by the treaties, nor in the form they establish.* Minister Latorre replies: «that the Chilian expert has communicated to his government, that said points and stretches *are* situated in the Cordillera de los Andes as ordered by the treaties and in the form they establish». Hence the arbitration.

After reading what our expert most positively avers, such wide discrepancies can only be explained by the already proverbial «continental divide», which seems to create a sort of mirage of mountains where there is only a pampa, just as in the desert people imagine they see sheets of water where there is only sand.

A lamentable situation indeed, and ultimately derogatory to the credit of one of the two nations.

Synthesis of the boundary treaties.

§ 37.—It is evident that both nations were bent upon laying down an «immovable boundary» between them, and that they earnestly endeavoured to set aside all obstacles which might thwart said purpose. Hence the confirmation of the Andes as an international limit, and hence also the provisions for amicable arrangements in case the cordillera should in the southern regions appear more or less effaced or broken up, or abandon its normal trend from north to south.

Still the treaty of 1881, by itself, cannot be fairly construed or well comprehended; because, as has been often declared, the high contracting parties did not then know the results of ulterior explorations of the Andes. There can be no doubt as to the truth of this assertion, as both countries considered that, to reach practical conclusions, they required a further explanatory covenant or one which would cover the deficiencies of the above treaty. The Argentine Republic and Chili entered therefore into a fresh agreement, known under the name of «Protocol of 1893.»

§ 38.—In pursuance of the idea of mastering what I had to translate, I began by making, after a careful reading, the following synthesis of the documents already mentioned :

§ 39.—The boundary between the Argentine Republic and Chili, from north to south, *is the Cordillera of the Andes;* and the frontier line shall run along the most elevated crests of said cordillera that may divide the waters, and shall pass between the slopes that descend one side and the other. (Art. 1 Treaty of 1881.)

§ 40.—The frontier line however, since it must cut rivers, (Art. 1 Protocol of 1893), cannot always be that of the water-parting or *divortium aquarum.*

The *divortium aquarum of the Andes* (1) (Art. 2, Treaty of (1881), may in some cases be, and in others not be, equivalent to what is termed : the *watershed* (or «dividing line of the waters» of Art, 1, Treaty of 1881, and Art. 3, Protocol of 1893, which article copies part of Art. 1 of said Treaty.)

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(1) The words *divortium aquarum* are no modern device introduced, as many other Greek or Latin words, for scientific purposes: their origin is strictly Roman. They signify:

1. «*The place where a watercourse forks and then flows in two branches*». This is why some English authors reject the term «water-parting» and prefer «watershed». Other writers adopt the former and object to the latter; because some people employ it in order to indicate a slope, which is a mistake. However both terms mean a separation of the waters, be they meteoric or not, be the divide a high or a low one.

2. «*The place where a mountain forms two slopes*»,—a way of defining the anticlinal line. In this second acception the words *dic. aq.* are considered as synonyms of heights, crests *(culmen* whence the Spanish *cumbre).*

Cicero compares the division of the schools to the waters parted on the heights of the Apennines .. *Ut ex Apennino fluminum, sic ex communi sapientium juge sunt doctrinarum facta* divortia. (De *Or.* III, 11.—(c. Garnier Frères' Ed. III p. 349).

He also says that the watershed of Mount Amanus separates Syria from Cilicia.... *Inde ad Amanum contendi, qui Syriam a Cilicia* aquarum divortio *dividit. (Ad Att,* v. 20. 3.—Ed., *cit.* p. 349).

Livy tells us that Cn, Manlius could scarcely be disuaded from crossing the Taurus and that he encamped with his army on the crest of said mountains near the sources of the rivers ... *Admovisse tamen exercitum et prope ipsis jugis ad* divortia aquarum *castra possuise. Liv.* 30. § 45. Ed. Lisard).

The French translators, in the two first cases, render *dic. aq.* by *du haut* —from the heights,—*sommet*—summit, and in the third by *crête même*—the very crest.

Consequently the *dic. aq.* of the Andes is, according to the Latin meaning of said words, a crest watershed. In this seuse I also agree with Walker Martinez (v. p. XVII). It appears the appendix «continental» is our only difficulty *(v. Dics. of Marques de Morante,* and *Freund* and *Theil.)*

a) It will be equivalent to said watershed, if the line of «the most elevated crests as may divide the waters» coincides with the *divortium aquarum* of the «principal chain of the Andes» (Art. 2, Protocol 1893.)

b) It will not be so, if it does not coincide with the culminating line of said «most elevated crests» or watershed,—a circumstance which it seems occurs in the vicinity of parallel 52° S., where the Cordillera may be «found penetrating into the channels of the Pacific» (Art. 2, Protocol 1893.)

§ 41.—Still, neither the «most elevated crests that may divide the waters,» nor the *divortium aquarum* coincide always with the boundary line, which case occurs when the watershed may not be apparent owing to the existence of certain valleys formed by the bifurcation of the Cordillera (Art. 1, Treaty 1881,)—and it should be found necessary to depart from said watershed, in order to trace the line in such a manner that «all lands and « waters, to wit: lakes, lagoons, rivers, parts of rivers», &c., lying to the east of said line be Argentine, and Chilian «all lands and waters», &c., to the west of the same line (Art. 1, Protocol 1893); and in such a way that Chili remains with «no point toward the Atlantic», nor the Argentine Republic with «any point toward the Pacific», as Chili «cannot pretend» such a thing, nor can Argentina «pretend it» either, according to «the provisions of said treaty»;—especially after the categorical declaration which heads article 2 of the protocol of 1893.

§ 42.—That the boundary-line is to « run along the most elevated crests of the cordillera that may divide the waters and « pass between the slopes that descend either side,» is a «principle» which « the experts and the subcommissions shall « observe as an invariable rule of their proceedings » (art. 1, « Protocol 1893); and when «the watershed should not be apparent »..... then « the experts shall see that a search is made on « the ground for this geographic condition of the demarcation.» «(Art. 1 Treaty 1881, and 3, Protocol 1893).

The words—« this geographic condition »—do not imply that

it is *the* condition, the only one worth considering, the *conditio sine qua non* that reduces mountain flanks, most elevated points, summit lines and predominant crests to naught (v. p. IX, § 11), the condition for the sake of which every other clause should be sacrificed. No, it is only *one* of the conditions, and the experts are bound to do their best to fulfill it. Yet, no partiality for « the course of the waters » should exert such a blinding effect as to hinder either of them from seeing the Andes or from reading arts. 1 and 2 of the protocol of 1893. If the experts failed to discover the above geographic condition, the principal chain of said cordillera would always afford them a sure basis and a still surer guide, both for construing the treaties in a sensible manner and for working rightly and efficiently on the ground.

It is an old and reliable legal maxim of construction that the fundamental provisions of covenants should be interpreted so as to mean something, and not so as to contradict and undo each other. Moreover, the possible exception in the forking of the cordillera does not destroy, it confirms the great rule of the main range of the Andes from north to south down to parallel 52° S.

The declaration of a principle that is to be held as a rule of procedure does not necessarily imply the continued or constant existence of the thing to which it is to be applied, and consequently the protocol of 1893 foresees the case in which it may be impossible to apply it, in order that neither the Argentines penetrate into the channels of the west or pretend « points toward the Pacific », nor the Chilians into the Patagonian territories of the east or pretend « points toward the Atlantic ». The principal chain of the Andes is to remain between them.

Nor does a principle which is to serve as an invariable rule for defining boundaries, authorize the substitution of one thing for another, i. e.: to put the *divortium aquarum* of valleys, of tablelands and of the edges of fluvial or marine basins,—a *hydrographic limit*,—which may leave the cordillera some 20 or 30

leagues to the west or take place in the Argentine or eastern slope of the Andes, a comparatively gradual one,—instead of the *divortium aquarum* of the *main range of the cordillera*, the central, the Andine, the culminating line of the highest crests that may divide the waters, which is the true geographical basis, *the orographic boundary* of the demarcation conformably with the treaties.

The orographic boundary once exchanged for the hydrographic limit, the « hydrological » consequences flow with all ease, and the southern territories of the Argentine Republic are invaded by the unwarranted application of the above rule. And yet said rule never had those lands in view, as it deals only with the *divortium aquarum* of the Andes,—a line, the trend of which is determined by the crests of the principal chain of said mountains (arts. 1 and 2, Treaty 1881; arts, 1, 2, 3,—which expressly refers to article 1 of said treaty,—and 8 of the Protocol 1893; and bases 1 and 2 of the Agreement 1896).

However the experts may endeavour to discover on the ground the geographical condition of the parting of the waters by the highest crests,—they cannot, according to the treaties, abandon the culminating lines of the principal chain of the Andes, and adopt in its stead the lower levels of the continental divide.

Whatever they may do, the treaty does not allow them to come to the following conclusion:—« The boundary between the « Argentine Republic and Chili, from north to south, down to « parallel 52 is » NOT « the cordillera of the Andes »; because, although we do not pretend that the Andes entirely belong to us, still we cannot accept a line which leaves said cordillera westward, as an interior mountain belonging to Chili only; and also because the cordillera is to remain « the immovable boundary line » between both nations. (Art. 6, Treaty 1881 and preamble of Agreement 1896).

§ 43.—Immovability,—which the treaty emphasizes strongly as the characteristic trait of the frontier-line,—may be expected from the solid and massive ranges of the main chain which

stretch from north to south, but hardly from the essentially variable and shifting watersheds of the hydrographic basins of rivers that flow from east to west or vice-versa, and start sometimes from sources which are many miles away from the cordillera.

§ 44.—I conclude, Sir, that there is only one sensible and *bona fide* construction of the boundary conventions, namely:

1.—That the Andes, by nature and according to the treaties, are the «immovable boundary» between the Argentine Republic and Chili;

2.—That the frontier line must be defined and marked off within the main range,—the *encadenamiento principal*,—of the Cordillera de los Andes;

3.—That our international limit with Chili must always follow the most elevated cumbres or crests that may separate the waters of said main range, whether the anticlinal line thus specified does coincide or not with the continental water-parting, the which determines,—now in, now out of the cordillera,—the unstable edge of the drainage areas of two oceans and not the conventionally fixed boundary of two nations;

4.—That when the above mentioned crests do not divide the waters as watersheds, all streams, rivers or watercourses must be cut or crossed by the frontier line; neither party being entitled to abandon the main range in the tracing of said line, in order to follow the capricious windings and abnormal swervings of the continental divide; because it has been solemnly agreed and declared, by the Argentine and Chilian representatives, with the approval of both Congresses that:—«*In the opi-*
«*nion of their respective governments, and according to the*
«*spirit of the boundary treaty, the Argentine Republic retains*
«*its dominion and sovereignty over all the territory that extends*
«FROM THE EAST OF THE PRINCIPAL CHAIN OF THE ANDES *to the*
«*coast of the Atlantic, just as the Republic of Chili* OVER THE
«WESTERN TERRITORY *to the coasts of the Pacific;*»

5.—That the treaties provide only one method by which the tracing of the frontier line can be carried out, and that is:—along the most elevated crests that divide the waters of the main range, and that they provide two for disposing of the waters, viz.:

a) Normally: *dividing them* by means of said crests, as long as the latter act as watersheds;

b) Exceptionally: *cutting them with the trend line* of said crests, when the latter do not act any longer as watersheds of the main range, or when ravines, gorges or transverse valleys allow the watercourses to break through the *encadenamiento principal* or principal chain of the Cordillera de los Andes.

That is the imposing barrier placed by the hand of Almighty God, invoked in the preamble of the boundary treaty of 1881.

Both nations must respect it. It is as if their peace and brotherhood reposed on that basis.

§ 45.—Y. E. must excuse whatever may appear foreign to the task I have undertaken, moved by no other aim but that of contributing to the defence of our national interests in the boundary controversy. Though more or less conversant with the English language, I am not acting as a professional translator: as a barrister, I cannot help pleading; as an Argentine, I must needs speak like a man who loves his country and thirsts for justice. There is besides inevitable vehemence in the very logic of reasoning. Moreover, a son of this Republic cannot be expected to read unwarranted charges with perfect equanimity when national decorum is at stake.

Whatever the deficiencies of my work, which I have had to perform in such a short space of time, Y. E. may feel sure they are not due to lack of earnest good will and conscientious investigation. It has been and is my avowed intention to prove that, if I err, it is not willingly I do so, as there is not one word of any importance which has not been thoroughly studied

and consulted,—a fact which I hope the notes to the translation will force home to any impartial mind.

I avail. &c.

EMILIO LAMARCA.

NOTE ON PRINTING

It is to be supposed from the way in which all boundary papers are published in Chili, that they must have exercised considerable influence on public opinion.

The two following pages are a sample of the kind of printing I refer to. Opposite the Chilian page, I put the possible reply, in a form in which I merely endeavour to imitate the first, as the type employed in this pamphlet is not thick enough.

Thick type are often in harmony with hollow arguments, as loud voices with unsound reasoning.

TRANSLATION

OF THE

BOUNDARY AGREEMENTS

IN FORCE BETWEEN

THE ARGENTINE REPUBLIC AND CHILI

INDICE

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TRATADO DE 1881

—

En nombre de Dios Todopoderoso. Animados los gobiernos de la República Argentina y de la República de Chile del propósito de resolver, amistosa y dignamente, la controversia de límites que ha existido entre ambos países, y dando cumplimiento al artículo 39 del Tratado de Abril del año 1856 (1) han resuelto celebrar un Tratado de limites y nombrado á este efecto sus plenipotenciarios, á saber:

S. E. el Presidente de la República Argentina al doctor don Bernardo de Irigoyen, ministro secretario de estado en el departamento de relaciones exteriores. S. E. el Presidente de la República de Chile, á don Francisco de B. Echeverría, cónsul general de aquella república.

Quienes, después de haberse manifestado sus plenos poderes y encontrándolos bastantes para celebrar este acto, han convenido en los artículos siguientes:

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(1) Artículo XXXIX.—Ambas partes contratantes, reconocen como límites de sus respectivos territorios, los que poseían como tales al tiempo de separarse de la dominación española el año 1810, y convienen en aplazar las cuestiones que han podido ó pueden suscitarse sobre esa materia para discutirlas después pacífica y amigablemente, sin recurrir jamás á medidas violentas, y en caso de no arribar á un completo arreglo, someter la decisión al arbitraje de una nación amiga.

TREATY OF 1881

In the name of Almighty God! The Governments of the Argentine Republic and of the Republic of Chili, animated by the purpose of resolving in a friendly and dignified manner the boundary-controversy that has existed between both countries, and in fulfilment of Article 39 of the Treaty of April 1856, (*) have decided to conclude a Boundary Treaty and named to that effect their plenipotentiaries, to wit:

His Excellency the President of the Argentine Republic Doctor Bernardo de Irigoyen, Minister and Secretary of State in the Department of Foreign Affairs, and His Excellency the President of the Republic of Chili Mr. Francisco de B. Echeverria, Consul General of said Republic.

Who, after having produced their full powers and finding them sufficient for the performance of this act have agreed upon the following articles:

(*) Art. XXXIX: Both the contracting parties acknowledge as boundaries of their respective territories, those they possessed as such at the time of separating from the Spanish dominion in the year 1810, and agree to postpone the questions which may have arisen or may arise regarding this matter in order to discuss them later on in a peaceful and amicable manner, without ever resorting to violent measures, and in the event of not arriving at a complete arrangement, to submit the decision to the arbitration of a friendly nation.

Artículo 1º—El límite entre la República Argentina y Chile es, de norte á sur, hasta el paralelo 52º de latitud, la cordillera de los Andes. La línea fronteriza correrá en esa extensión por las cumbres más elevadas de dichas cordilleras que dividan las aguas y pasará por entre las vertientes que se desprenden á un lado y otro. Las dificultades que pudieran suscitarse por la existencia de ciertos valles formados por la bifurcación de la cordillera y en que no sea clara la línea divisoria de las aguas, serán resueltas amistosamente por dos peritos nombrados uno de cada parte. En caso de no arribar éstos á un acuerdo, será llamado á decidirlas un tercer perito designado por ambos gobiernos. De las operaciones que practiquen se levantará un acta en doble ejemplar, firmada por los dos peritos, en los puntos en que hubieren estado de acuerdo, y además por el tercer perito en los puntos resueltos por éste. Esta acta producirá pleno efecto desde que estuviere subscrita por éllos y se considerará firme y valedera sin necesidad de otras formalidades ó trámites. Un ejemplar del acta será elevado á cada uno de los gobiernos.

Art. 2º—En la parte austral del continente y al norte del estrecho de Magallanes el límite entre los dos países será una línea que, partiendo de punta Dungeness, se prolongue, por tierra hasta Monte Dinero; de aquí continuará hacia el oeste siguiendo las mayores elevaciones de la cadena de colinas que allí existen hasta tocar en la altura de Monte Aymond. De este punto se prolongará la línea hasta la intersección del meridiano setenta con el paralelo cincuenta y dos de latitud y de aquí seguirá hacia el oeste coincidiendo con este último paralelo hasta el *divortia aquarum* de los Andes. Los territorios que quedan al norte de dicha línea pertenecerán á la República Argentina; y á Chile los que se extiendan al sur, sin perjuicio de lo que dispone respecto de la Tierra del Fuego é islas adyacentes el artículo tercero.

Art. 3º—En la Tierra del Fuego se trazará una línea que, partiendo del punto denominado Cabo del Espíritu Santo en la

ART. 1.—The boundary[1] between the Argentine Republic and Chili from North to South as far as the parallel of latitude 52° S.[2] is the cordillera[3] of the Andes.—The frontier line shall run in that extent along the most elevated crests[4] of said cordilleras[19] that may divide[5] the waters and shall pass between the slopes[6] which descend[7] one side and the other.—The difficulties that might arise from the existence of certain valleys formed by the bifurcation[8] of the cordillera, and in which the watershed[9] may not be apparent,[10] shall be amicably settled by two experts, one to be named by each party. Should they not come to an understanding, a third expert, named by both governments, shall be called upon to decide. A record,[11] in duplicate, of the operations carried out by them, embodying the points upon which they may have agreed, shall be drawn up and signed by the two experts, and besides by the third one as regards the points decided by him. This record, once signed by them, shall produce full effect and shall be held firm and valid[12] without necessity of further formalities or proceedings. A copy of the record shall be presented to each of the two governments.

ART. 2.—In the southern part of the continent, and to the north of the Straits of Magellan, the boundary between the two countries shall be a line, which starting from Point Dungeness, shall be prolonged overland[13] as far as Mount Dinero; thence it shall continue westward, following the highest elevations of the chain of hills existing there, until it strikes the height of Mount Aymont. From this point the line shall be prolonged up to the intersection of meridian 70° W.,[14] with parallel 52° S.[15] and thence it shall continue westward coinciding with this latter parallel as far as the *divortium aquarum*[16] of the Andes. The territories lying to the north of said line shall belong to the Argentine Republic, and to Chili those which extend to the south, without prejudice to the provisions of art. 3[d] concerning Tierra del Fuego and the adjacent islands.

ART. 3.—In Tierra del Fuego a line shall be traced which, starting from the point named Cape Espiritu Santo in latitude

latitud cincuenta y dos grados cuarenta minutos, se prolongará hacia el sur, coincidiendo con el meridiano occidental de Greenwich, sesenta y ocho grados treinta y cuatro minutos, hasta tocar en el canal Beagle. La Tierra del Fuego, dividida de esta manera, será chilena en la parte occidental y argentina en la parte oriental. En cuanto á las islas, pertenecerán á la República Argentina la isla de los Estados, los islotes próximamente inmediatos á ésta, y las demás islas que haya sobre el Atlántico, al oriente de la Tierra del Fuego y costas orientales de la Patagonia; y pertenecerán á Chile todas las islas al sur del canal Beagle hasta el Cabo de Hornos y las que haya al occidente de la Tierra del Fuego.

ART. 4º—Los mismos peritos á que se refiere el artículo primero fijarán en el terreno las líneas indicadas en los dos artículos anteriores y procederán en la misma forma que allí se determina.

ART. 5º—El estrecho de Magallanes queda neutralizado á perpetuidad y asegurada su libre navegación para las banderas de todas las naciones. En el interés de asegurar esta libertad y neutralidad no se construirán en las costas fortificaciones ni defensas militares que puedan contrariar ese propósito.

ART. 6º—Los gobiernos de la República Argentina y de Chile ejercerán pleno dominio y á perpetuidad sobre los territorios que respectivamente les pertenecen según el presente arreglo. Toda cuestión que por desgracia surgiere entre ambos países, ya sea con motivo de esta transacción, ya sea de cualquier otra causa, será sometida al fallo de una potencia amiga, quedando en todo caso como límite inconmovible entre las dos repúblicas el que se expresa en el presente arreglo.

ART. 7º—Las ratificaciones de este Tratado serán canjeadas en el término de sesenta días, ó antes si fuese posible, y el canje tendrá lugar en la ciudad de Buenos Aires ó en la de Santiago de Chile.

En fe de lo cual, los plenipotenciarios de la República Argentina y de la República de Chile firmaron y sellaron con sus

52°, 40' S., shall be prolonged southward coinciding with meridian 68°, 34' W. Greenwich, until it strikes Beagle Channel.

Tierra del Fuego, divided in this manner, shall be Chilian on the western and Argentine on the eastern side. As regards the islands, Staten Island, the islets in close proximity to same, and the remaining islands lying in the Atlantic to the east of Tierra del Fuego and of the eastern coasts of Patagonia, shall belong to the Argentine Republic; and all the islands south of Beagle Channel down to Cape Horn, as well as those lying to the west of Tierra del Fuego, shall belong to Chili.

ART. 4.—The same experts referred to in Art. 1st shall fix on the ground the lines indicated in the the two previous articles, and shall proceed in the same manner as therein established.

ART. 5.—The Straits of Magellan are neutralized for perpetuity, and their free navigation is secured to the flags of all nations. With the view of securing said liberty and neutrality, no fortifications nor military defences which may thwart [17] that purpose shall be erected on the coasts.

ART. 6.—The governments of the Argentine Republic and of Chili shall exercise full dominion and for perpetuity over the territories which respectively belong to them according to the present arrangement. Any question which might unfortunately arise between the two conntries, whether it be on account of this transaction, or owing to any other cause, shall be submitted to the decision of a friendly power, the boundary established in the present arrangement to remain at all events immovable [26] between the two republics.

ART. 7.—The ratifications of this treaty shall be exchanged whithin the term of sixty days, or sooner if possible, and the exchange shall take place in the city of Buenos Aires or in that of Santiago, Chili.

In witness whereof the plenipotentiaries of the Argentine Republic and of the Republic of Chili signed and sealed with their

respectivos sellos, y por duplicado, el presente Tratado en la ciudad de Buenos Aires, á veintitres días del mes de Julio del año de Nuestro Señor 1881.—(L. S.) *Bernardo de Irigoyen*—(L. S.) *Francisco de B. Echeverría.*

En Buenos Airer, á quince días del mes de Septiembre de mil ochocientos ochenta y uno, estando presentes en la secretaría del ministerio de relaciones exteriores de la República Argentina, el señor ministro secretario de estado en el departamento de relaciones exteriores, doctor don Bernardo de Irigoyen, y el señor don Francisco de B. Echeverría, plenipotenciario especial del excelentísimo gobierno de Chile, para suscribir el Tratado de límites que quedó firmado en esta ciudad el veintitres de Julio último, manifestó el señor Echeverría que había recibido de su gobierno instrucciones para proponer al excelentísimo gobierno de la República Argentina prorrogar el plazo estipulado en el artículo séptimo de dicho Tratado para la ratificación y canje, en razón de ser poco el término que restaba para que pudieran expedirse ambos congresos.

El señor ministro de relaciones exteriores contestó: que en vista de la consideración expuesta, el gobierno argentino no tendría inconveniente en estipular la ampliación.

Conformes en esta idea, el señor Echeverría exhibió los plenos poderes que le habían sido trasmitidos por el telégrafo para subscribir el presente protocolo, y que son del tenor siguiente:—«Santiago de Chile, Septiembre 13 de 1881.—Aníbal Pinto, Presidente de la República de Chile. A todos los que la presente vieren, salud!—Por cuanto: considero que el plazo fijado en el artículo séptimo del tratado de límites ajustado entre Chile y la República Argentina, es deficiente para efectuar en tiempo el canje de las ratificaciones.—Por tanto: y teniendo toda confianza en don Francisco B. de Echeverría, cónsul general de Chile en la República Argentina, he resuelto nombrar como por las presentes le nombro y constituyo plenipotenciario de Chile para que negocie y firme con el plenipotenciario debidamente autorizado por el gobierno argentino, un protocolo que consigne la prórroga que se estime conveniente del plazo que fija para el canje de las ratificaciones, el referido artículo séptimo del tratado de veintitres de Julio del presente año. Y todo lo que el referido plenipotenciario negocie y firme en virtud de estos plenos poderes, prometo cumplirlo en todas sus partes, previa la aprobación del congreso, que nuestra constitución prescribe. En fe de lo cual, he hecho extender estos plenos poderes, firmados de mi mano, sellado con el sello de las armas de la república y refrendados por el ministro de relaciones exteriores, á trece días del mes de septiembre del año de Nuestro Señor mil ochocientos ochenta y uno.—(firmado) Aníbal Pinto.—(firmado) *Melquiades Valderrama.*»

respective seals, in duplicate, the present treaty in the city of Buenos Aires on the twenty third day of July in the year of our Lord 1881.—(L. S.) *Bernardo de Irigoyen*—(L. S.) *Francisco de B. Echeverria.*

In Buenos Aires on the fifteenth day of the month of September 1881, the Minister and Secretary of State for the Department of Foreign Affairs, Dr. Bernardo de Irigoyen and Don Francisco de B. Echeverria, special plenipotentiary of the most excellent Government of Chili, having met in the Department of Foreign Affairs of the Argentine Republic with the object of subscribing the boundary treaty which was signed in this city on the 23d last July, Mr. Echeverria stated that he had received instructions from his Government to propose to the most excellent Government of the Argentine Republic, to extend the term stipulated in Art. 7 of said treaty for the ratification and exchange, as the time left for both congresses to decide was not sufficient.

The Minister of Foreign Affairs replied that, in view of the consideration put forward, the Argentine Govenment would have no objection to stipulate the extension. In conformity with this idea, Mr. Echeverría exhibited the full powers which had been transmitted to him by telegraph for signing the present protocol which read as follows:

Santiago, Chili, 13th September 1881.—Anibal Pinto, President of the Republic of Chili, to all to whom these presents shall come, sends greeting! Whereas I consider that the term fixed in Art. 7 of the boundary treaty concluded between Chili and the Argentine Republic is not sufficient for carrying out in due time the exchange of the ratifications. Therefore, having all confidence in Mr. Francisco de B. Echeverria, Consul General of Chili in the Argentine Republic, I have resolved to name and by these presents do name and constitute him Plenipotentiary of Chili, in order that he may negotiate and sign with the Plenipotentiary duly authorized by the Argentine Government, a protocol establishing the extension, which may be deemed convenient, of the term fixed for the exchange of the ratifications by the above mentioned Art. 7 of the treaty of 23d July of the present year. And every thing that said Plenipotentiary may negotiate and sign in virtue of said full powers, I promise to fulfill in every part with the previous approval of Congress, as provided by our Constitution. In witness whereof I have granted these full powers, signed by my hand, sealed with the Great Seal[18] of the Republic, and countersigned by the Minister of Foveign Affairs on the 13th Sept. A. D. 1881.—(Sgd) *Anibal Pinto*—(Sgd) *Melquiades Valderrama.*

El señor Echeverría ofreció, de acuerdo con lo que su gobierno le previene en telegrama anterior, presentar los poderes en la forma de costumbre, y habiéndose aceptado por el señor ministro de relaciones exteriores esta promesa y exhibido por su parte la plenipotencia que le ha sido conferida por S. E. el Presidente, para negociar y firmar por parte de la República Argentina el presente protocolo y después de diversas indicaciones sobre el plazo, las que fueron discutidas, convinieron ambos plenipotenciarios ampliar por treinta días más el término estipulado para la ratificación y canje del Tratado firmado en esta ciudad el veintitres de Julio, debiendo contarse la prórroga desde el veintidos del corriente mes.

El presente protocolo será considerado como parte adicional é integrante del referido tratado y sometido como tal à la aprobación de los respectivos congresos.

En fe de lo cual firmaron y sellaron con sus respectivos sellos el presente protocolo. — (L. S.) *Bernardo de Irigoyen.* — (L. S.) *Francisco de B. Echeverría.*

Departamento de Relaciones Exteriores

—

Buenos Aires, Octubre 11 de 1881.

Por cuanto:

El senado y cámara de diputados de la Nación Argentina, reunidos en congreso, etc.

Sancionan con fuerza de

LEY:

ARTÍCULO 1°—Apruébase el tratado de límites con la República de Chile, celebrado en esta capital el veintitres de julio del presente año, y el protocolo anexo, firmado el quince de septiembre del mismo.

ART. 2°—Comuníquese al poder ejecutivo.

Dada en la sala de sesiones del congreso argentino, en Buenos Aires, á once de octubre de mil ochocientos ochenta y uno.

FRANCISCO B. MADERO
Carlos M. Saracia
Secretario del senado.

LIDORO J. QUINTEROS
Miguel Sorondo
Secretario de la cámara de diputados.

Por tanto:

Cúmplase, comuníquese, publíquese y dése al R. N.

ROCA
BERNARDO DE IRIGOYEN

Mr. Echeverria, in accordance with the instructions given to him by his government in a previous telegram, offered to present the powers in the usual form, and said promise having been accepted by the Minister of Foveign Affairs, he having on his part exhibited the full power conferred on him by H. E. the President for negotiating and signing on behalf of the Argentine Republic the present protocol, and after discussing several indications regarding the term, both plenipotentiaries agreed to extend for thirty days more the term stipulated for the ratification and exchange of the treaty signed in this city on the 23d July, the extension to be reckoned from the twenty second of the current month.

This protocol shall be considered an additional and integral part of the above mentioned treaty, and shall be submitted as such to the approval of the respective Congresses.

In witness whereof they signed and sealed with their respective seals the present protocol.—(L. S.) *Bernardo de Irigoyen.*—(L. S.) *Francisco de B. Echeverria.*

Department of Foreign Affairs

Buenos Ayres, October 11th 1881.

Whereas:

The Senate and Chamber of Deputies of the Argentine Republic, assembled in Congress, etc.

Enact the following

LAW:

ARTICLE 1.—The boundary treaty with the Republic of Chili concluded in this capital on the twenty third of July of the current year, and the protocol annexed signed on the fifteenth of September of the same year are hereby sanctioned.

ART. 2.—Let it be communicated to the Executive Power.

Given in the Chamber of Sessions of the Argentine Congress, in Buenos Aires the 11th of October 1881.

FRANCISCO B. MADERO
Carlos M. Saravia
Sec. to the Senate.

LIDORO J. QUINTEROS
Miguel Sorondo
Sec. to the Chamber of Deputies.

Therefore:

Let it be complied with, communicated, published, and inserted in the National Registry.

ROCA
BERNARDO DE IRIGOYEN

Reunidos en la sala de despacho del departamento de relaciones exteriores, el señor don Agustín Arroyo, cónsul general de la República Argentina, y el señor don José Manuel Balmaceda, ministro de relaciones exteriores de Chile, con el objeto de proceder al canje de las ratificaciones del tratado de límites, ajustado entre ambas repúblicas el 23 de Julio del presente año, el señor Balmaceda, expuso: Que el gobierno de Chile se encontraba en aptitud de efectuar el canje de las ratificaciones, y, al efecto presentó el instrumento auténtico de la ratificación de su excelencia el Presidente de la República y los plenos poderes que le facultaban para llenar esa formalidad. Por su parte el señor Arroyo significó que se encontraba en posesión de idénticos documentos exhibiendo á su vez el instrumento auténtico de la ratificación de su excelencia el Presidente de la República Argentina y los plenos poderes que lo autorizaban para proceder á verificar el canje, previniéndose que el instrumento de ratificación y los plenos poderes del señor Arroyo han sido acreditados para este acto por comunicación oficial telegráfica del gobierno argentino, cuya forma de procedimiento acepta el plenipotenciario de Chile, debiendo entregarse los instrumentos auténticos de ratificación y plenos poderes en el momento que lleguen á esta capital.

Examinados los respectivos plenos poderes que se encontraron en buena forma, dióse lectura comparada al texto de ambas ratificaciones, en las cuales se encontraron fiel y exactamente incorporados todos y cada uno de los artículos del tratado de límites de veintitres de Julio del corriente año.

En seguida se efectuó el canje de las ratificaciones.

En fe de lo cual, el plenipotenciario de la República Argentina y el plenipotenciario de Chile firmaron y sellaron la presente acta, en doble ejemplar, el día veintidos de Octubre del año de mil ochocientos ochenta y uno.—(L. S.) *Agustin Arroyo.*—(L. S.) *J. M. Balmaceda.*

Mr. Agustin Arroyo, Consul General of the Argentine Republic, and Mr. José Manuel Balmaceda, Minister for Foreign Affairs of Chili, having met in the Department of Foreign Affairs with the object of exchanging the ratifications of the boundary treaty agreed upon between both Republics the 23d of July of the current year, Mr. Balmaceda stated: that the Government of Chili was enabled to carry out the exchange of the ratifications, and to that effect he presented the authentic instrument of ratification of His Excellency the President of the Republic, and the full powers authorizing him to realize that formality. On his part, Mr. Arroyo signified that he was in possession of identical documents, exhibiting in his turn the authentic instrument of ratification of His Excellency the President of the Argentine Republic, and the full powers authorizing him to verify the exchange, pointing out that the instrument of ratification and the full powers of Mr. Arroyo had been accredited for this act by an official telegraphic communication from the Argentine Government, which form of proceeding the Chilian Plenipotentiary accepts, the authentic instruments of ratification and full powers to be presented as soon as they arrive in this Capital.

The respective full powers having been examined and found to be in good form, the two ratifications were read and their contents collated, in which were found to be faithfully and exactly embodied all and every one of the articles of the boundary treaty of the 23d of July of the current year.

After which the exchange of the ratifications was effected.

In witness whereof, the Plenipotentiary of the Argentine Republic and the Plenipotentiary of Chili signed and sealed the present act in duplicate, the 22d of October of the year 1881. — (L. S.) *Agustin Arroyo.* — (L. S.) *J. M. Balmaceda.*

CONVENCIÓN DE 1888

—

Los gobiernos de la república Argentina, y de la república de Chile, animados del común deseo de dar ejecución á lo estatuído en el tratado celebrado por ambos en 23 de Julio de 1881, con relación á la demarcación de los límites territoriales entre uno y otro país, han nombrado sus respectivos plenipotenciarios, á saber:

S. E. el presidente de la república Argentina al señor don José E. Uriburu, su envíado extraordinario y ministro plenipotenciario en Chile.

Y S. E. el presidente de la república de Chile al señor don Demetrio Lastarria, ministro de relaciones exteriores.

Quiénes, debidamente autorizados al efecto, han acordado las estipulaciones contenidas en las cláusulas siguientes:

I.—El nombramiento de los dos peritos á que se refieren los artículos 1° y 4° del tratado de límites de 1881, se hará por los gobiernos signatarios dentro del término de dos meses, contados desde el canje de las ratificaciones de este convenio.

II.—Para auxiliar á los peritos en el desempeño de sus funciones, cada uno de los gobiernos nombrará, también en el mismo plazo, cinco ayudantes.

El número de éstos podrá aumentarse en proporción idéntica por una y otra parte, siempre que los peritos lo soliciten de común acuerdo.

CONVENTION OF 1888

—

The Governments of the Argentine Republic and of the Republic of Chili, mutually animated by the desire to execute the stipulations of the treaty concluded by both on the twenty third of July 1881 concerning the demarcation of the territorial boundaries betwen the two countries, have appointed their respective Plenipotentiaries, to wit:

H. E. the President of the Argentine Republic Mr. José E. Uriburu, Envoy Extraordinary and Minister Plenipotentiary to Chili, and

H. E. the President of the Republic of Chili Mr. Demetrio Lastarria, Minister of Foreign Affairs.

Who, duly authorized for the purpose, have agreed upon the stipulations contained in the following clauses:

I.—The appointment of the two experts referred to in articles 1 and 4 of the boundary treaty of one thousand eight hundred and eighty one, shall be made by the signatory governments within the term of two months reckoned fron the exchange of the ratifications of this agreement.

II.—In order to aid the experts in the fulfilment of their functions each government shall likewise name within the same term five assistants.

The number of these may be increased in identical proportion by one and the other party, provided the experts make the request by common accord.

III.—Los peritos deberán ejecutar en el terreno la demarcación de las líneas indicadas en los articulos 1°, 2° y 3° del Tratado de límites.

IV.—Pueden, sin embargo, los peritos confiar la ejecución de los trabajos á comisiones de ayudantes. Estos ayudantes se nombrarán en número igual por cada parte.

Las comisiones ajustarán sus procedimientos á las instrucciones que les darán los peritos de común acuerdo y por escrito.

V.—Los peritos deberán reunirse en la ciudad de Concepción de Chile, cuarenta días después de su nombramiento, para ponerse de acuerdo sobre el punto ó puntos de partida de sus trabajos y acerca de lo demás que fuere necesario.

Levantarán acta por duplicado de todos los acuerdos y determinaciones que tomen en esa reunión y en el curso de sus operaciones.

VI.—Siempre que los peritos no arriben á acuerdo en algún punto de la fijación de límites ó sobre cualquiera otra cuestión, lo comunicarán respectivamente á sus gobiernos para que éstos procedan á designar el tercero que ha de resolver la controversia, según el tratado de límites de 1881.

VII. — Los peritos podrán tener, á voluntad del respectivo gobierno, el personal necesario para su servicio particular, como el sanitario ó cualquier otro, y cuando lo estimen conveniente para su seguridad podrán pedir una partida de tropa á cada uno de los dos gobiernos, ó únicamente al de la nación en cuyo territorio se encontraren: en el primer caso, la escolta deberá constar de igual número de plazas por cada parte.

VIII.—Los peritos fijarán las épocas de trabajo en el terreno, é instalarán su oficina en la ciudad que determinaren, pudiendo, sin embargo, por común acuerdo, trasladarla de un punto á otro, siempre que las necesidades del servicio así lo aconsejaren.

Cada gobierno proporcionará al perito que nombre y á sus ayudantes, los elementos y recursos que necesiten para su trabajo y ambos pagarán en común los gastos que ocasionen las oficinas y el amojonamiento de los límites.

III.—The experts shall carry out on the ground the demarcation of the lines indicated in articles 1, 2 and 3 of the boundary treaty.

IV.—The experts may however entrust the execution of the work to commissions of assistants. These assistants shall be named in equal number by each party. The commissioners shall adjust their proceedings to the instructions that the experts shall by mutual accord give them in writing.

V.—The experts shall meet in the city of Concepcion, Chili, forty days after their nomination, in order to agree upon the point or points of starting their work, and upon all other necessary matters. They shall draw up in duplicate a record of all the decisions and resolutions they may adopt in that meeting and in the course of their operations.

VI.—Whenever the experts fail to agree on any point in the fixing of boundaries or on any other question, they shall respectively communicate it to their governments in order that the latter may proceed to designate the third expert who is to resolve the controversy according to the boundary treaty of 1881.

VII.—The experts may have, at the discretion of the respective governments, the personnel required for their private service, such as sanitary or otherwise, and whenever they may consider it requisite for their safety, they may ask for a detachment of troops from each government, or only from that of the nation in whose territory they may be at the time. In the first case, the escort shall consist of an equal number of men from each party.

VIII.—The experts shall determine the epochs for working on the ground, and shall open their office in the city they may choose, nevertheless they may by mutual agreement move it from one place to another whenever required by the necessities of the service.

Each govervment shall furnish its own expert and his assistants with such outfit and resources as they may require for their work, and both shall pay in common the expenses of the offices and those of setting the boundary marks.

IX.—Siempre que quede vacante alguno de los puestos de perito ó ayudante, el gobierno respectivo deberá nombrar el reemplazante en el término de dos meses.

X.—La presente convención será ratificada y el canje de las ratificaciones se hará en la ciudad de Santiago ó en la de Buenos Aires, en el más breve plazo posible.

En fe de lo cual, los plenipotenciarios de ambos gobiernos firmaron el presente convenio, en doble ejemplar, en Santiago de Chile, á los veinte días del mes de Agosto del año mil ochocientos ochenta y ocho.—(L. S.) *José E. Uriburu.*—(L. S.) *Demetrio Lastarria.*

Departamento de Relaciones Exteriores — N°. 2488

Buenos Aires, Agosto 17 de 1889.

Por cuanto:

El senado y cámara de diputados de la nación Argentina, reunidos en congreso, etc.

Sancionan con fuerza de

LEY:

Artículo 1°.—Apruébase la convención para la demarcación de límites, en cumplimiento del tratado de 1881, celebrada en Santiago de Chile el 20 de agosto de 1888.

Art. 2°.—Comuníquese al poder ejecutivo.

Dada en la sala de sesiones del congreso argentino, en Buenos Aires, á nueve de Agosto de mil ochocientos ochenta y nueve.

M. Derqui
Adolfo J. Labougle,
Secretario del senado.

B. Zorrilla
Alejandro Sorondo,
Secretario de la cámara de diputados.

Por tanto:

Cúmplase, comuníquese, publíquese y dése al R. N.

JUÁREZ CELMAN.
N. Quirno Costa.

IX.—In case of vacancy of any of the posts of expert or assistant, the respective government shall appoint a substitute withim a term of two months.

X.—The present convention shall be ratified, and the exchange of ratifications made in the city of Santiago or in that of Buenos Aires, as soon as possible.

In witness whereof the Plenipotentiaries of both Goverments signed the present agreement in duplicate, in Santiago, Chili, on the twentieth of August, one thousand eight hundred and eighty eight.—(L. S.) *José E. Uriburu.*—(L. S.) *Demetrio Lastarria.*

Department of Foreign Affairs N. 2488.

Buenos Aires, 17th of August 1889.

Whereas:

The Senate and Chamber of Deputies of the Argentine Nation, assembled in Congress, etc.

Enact the following—

LAW:

ARTICLE 1.—The convention of the demarcation of boundaries is hereby approved in compliance with the treaty of 1881, concluded in Santiago, Chili, on the 20th August 1888.

ART. 2.—Let it be communicated to the Executive Power.

Given in the Chamber of Sessions of the Argentine Congress in Buenos Aires on the ninth of August 1889.

M. DERQUI
Adolfo J. Labougle
Sec. to the Senate.

B. ZORRILLA
Alejandro Sorondo
Sec. to the Chamber of Deputies.

Therefore:

Let it be complied with, communicated, published and inserted in the National Registry.

JUAREZ CELMAN
N. QUIRNO COSTA

Reunidos en el ministerio de relaciones exteriores de Chile, el señor don José E. Uriburu, enviado extraordinario y ministro plenipotenciario de la república Argentina, y el señor don Juan Castellón, ministro del ramo, con el objeto de proceder al canje de las ratificaciones de la convención de límites firmada entre la república Argentina y Chile con fecha 20 de Agosto de 1888; después de haberse comunicado sus plenos poderes respectivos y encontrándolos en buena y debida forma, examinaron cuidadosamente los dos textos de la convención mencionada y habiéndolos hallado exactos y conformes entre sí y sus originales, verificaron el canje referido.

En fe de lo cual, el señor enviado extraordinario y ministro plenipotenciario de la república Argentina y el señor ministro de relaciones exteriores de Chile, firmaron y sellaron con sus sellos respectivos la presente acta de canje, hecha por duplicado en Santiago á once de enero de mil ochocientos noventa.—(L. S.) *José E. Uriburu.*—(L. S.) *Juan Castellón.*

Mr. José E. Uriburu, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and Mr. Juan Castellon, Minister of the Department, having met in the Department of Foreign Affairs of Chili in order to exchange the ratifications of the boundary treaty signed between the Argentine Republic and Chili on the 20th August 1888; after having exhibited to each other their respective full powers, and found them in good and due form, they carefully examined both the texts of the above mentioned convention, and having found them exact and that they tallied with each other and with their originals, they verified the exchange alluded to.

In witness whereof the Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic and the Minister of Foreign Affairs of Chili signed and sealed with their respective seals the present act of exchange, made in duplicate in Santiago on the 11th January 1890. — (L. S.) *José E. Uriburu.*— (L. S.) *Juan Castellon.*

PROTOCOLO DE 1893

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En la ciudad de Santiago de Chile, á primero de mayo de mil ochocientos noventa y tres, reunidos en la sala de despacho del ministerio de relaciones exteriores, don Norberto Quirno Costa, enviado extraordinario y ministro plenipotenciario de la república Argentina, y el ministro de guerra y marina, don Isidoro Errázuriz, en su carácter de plenipotenciario *ad hoc*, después de tomar en consideración el estado actual de los trabajos de los peritos encargados de efectuar la demarcación del deslinde entre la república Argentina y Chile, en conformidad al Tratado de límites de 1881, y animados del deseo de hacer desaparecer las dificultades con que aquellos han tropezado ó pudieran tropezar en el desempeño de su cometido, y de establecer entre los dos estados completo y sincero acuerdo que corresponda á los antecedentes de confraternidad y gloria que les son comunes, y á las vivas aspiraciones de la opinión á uno y otro lado de los Andes, han convenido en lo siguiente:

Primero—Estando dispuesto por el artículo 1° del Tratado de 23 de Julio de 1881, que «el límite entre Chile y la república Argentina es de norte á sur hasta el paralelo 52° de latitud, la cordillera de los Andes», y que «la línea fronteriza correrá por las cumbres más elevadas de dicha cordillera, que dividan las aguas, y que pasará por entre las vertientes que se desprenden á un lado y á otro», los peritos y las sub-comisiones tendrán

PROTOCOL OF 1893

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In the city of Santiago, Chili, on the first of May 1893, Mr. Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and the Minister of War and Marine Mr. Isidoro Errazuriz in his character of Plenipotentiary *ad hoc,* having met in the Department of Foreign Affairs, after having considered the present state of the work of the experts entrusted with the demarcation of the delimitation between the Argentine Republic and Chili, in accordance with the boundary treaty of 1881, and animated by the desire of removing the difficulties which have embarrassed or might embarrass them in the fulfilment of their commission, and of establishing between both States a complete and cordial understanding in harmony with the antecedents of brotherhood and glory common to both, and with the ardent wishes of public opinion on either side of the Andes, have agreed as follows:

FIRST—Whereas Article 1 of the treaty of 23d July 1881 provides that «the boundary between Chili and the Argentine Republic from north to south as far as parallel of latitude 52° S. is the Cordillera of the Andes,» and that «the frontier line shall run along the most elevated crests of said Cordillera [19] that may divide the waters, and shall pass between the slopes[6] which descend [7] one side and the other,» the experts and the sub-

este principio por norma invariable de sus procedimientos. Se tendrá, en consecuencia, á perpetuidad, como de propiedad y dominio absoluto de la república Argentina, todas las tierras y todas las aguas, á saber: lagos, lagunas, ríos y partes de ríos, arroyos, vertientes que se hallen al oriente de la línea de las más elevadas cumbres de la cordillera de los Andes que dividan las aguas, y como de propiedad y dominio absoluto de Chile, todas las tierras y todas las aguas, á saber: lagos, lagunas, ríos y partes de ríos, arroyos, vertientes, que se hallen al occidente de las más elevadas cumbres de la cordillera de los Andes que dividan las aguas.

Segundo. — Los infrascriptos declaran que, á juicio de sus gobiernos respectivos, y según el espíritu del Tratado de límites, la república Argentina conserva su dominio y soberanía sobre todo el territorio que se extiende al oriente del encadenamiento principal de los Andes, hasta las costas del Atlántico, como la república de Chile el territorio occidental hasta las costas del Pacífico; entendiéndose que, por las disposiciones de dicho Tratado, la soberanía de cada estado sobre el litoral respectivo es absoluta, de tal suerte, que Chile no puede pretender punto alguno hácia el Atlántico, como la república Argentina no puede pretenderlo hácia el Pacífico. Si en la parte peninsular del sur, al acercarse al paralelo 52°, apareciere la cordillera internada entre los canales del Pacífico qne allí existen, los peritos dispondrán el estudio del terreno para fijar una línea divisoria que deje á Chile las costas de esos canales; en vista de cuyos estudios, ambos gobiernos la determinarán amigablemente.

Tercero. — En el caso previsto por la segunda parte del artículo primero del Tratado de 1881, en que pudiera suscitarse dificultades « por la existencia de ciertos valles formados por la bifurcación de la cordillera y en que no sea clara la línea divisoria de las aguas », los peritos se empeñarán en resolverlas amistosamente, haciendo buscar en el terreno esta condición geográfica de la demarcación. Para ello deberán, de común acuerdo, hacer le-

commissions shall observe this principle as an invariable rule of their proceedings. Consequently all lands and all waters, to wit: lakes, lagoons, rivers and parts of rivers, streams, slopes situated to the east of the line of the most elevated crests of the Cordillera of the Andes that may divide the waters, shall be held in perpetuity to be the property and under the absolute dominion of the Argentine Republic; and all lands and all waters, to wit: lakes, lagoons, rivers and parts of rivers, streams, slopes [20] situated to the west of the line of the most elevated crests of the Cordillera of the Andes to be the property and under the absolute dominion of Chili.

SECOND—The undersigned declare that, in the opinion of their respective governments, and according to the spirit of the boundary treaty, the Argentine Republic retains its dominion and sovereignty over all the territory that extends from the east of the principal chain of the Andes [21] to the coast of the Atlantic, just as the Republic of Chili over the western territory to the coasts of the Pacific; it being understood that by the provisions of said treaty, the sovereignty of each State over the respective coast line is absolute, in such a manner that Chili cannot lay claim to any point toward the Atlantic, just as the Argentine Republic can lay no claim to any toward the Pacific. If in the peninsular part of the south, on nearing parallel 52°, S, the Cordillera should be found [22] penetrating into the channels of the Pacific there existing, the experts shall undertake the study of the gronnd in order to fix a boundary line leaving to Chili the coasts of said channels; in consideration of which study, both governments shall determine said line amicably.

THIRD—In the case foreseen in the second part of the first article of the treaty of 1881, where difficulties might arise «from the existence of certain valleys formed by the bifurcation of the Cordillera, and in which the watershed [23] may not be apparent» the experts shall endeavour to settle them amicably, seeing that [24] a search be made on the ground for this geographical condition [24] of the demarcation. For that purpose, of joint accord, they shall

vantar por los ingenieros ayudantes un plano que les sirva para resolver la dificultad.

CUARTO.—La demarcación de la Tierra del Fuego comenzará simultáneamente con la de la cordillera, y partirá del punto denominado Cabo Espíritu Santo. Presentándose allí, á la vista, desde el mar, tres alturas ó colinas de mediana elevación, se tomará por punto de partida la del centro ó intermediaria, que es la más elevada, y se colocará en su cumbre el primer hito de la línea demarcadora que debe seguir hacia el sur, en la dirección del meridiano.

QUINTO.—Los trabajos de demarcación sobre el terreno se emprenderán en la primavera próxima, simultáneamente, en la cordillera de los Andes y en la Tierra del Fuego, con la dirección convenida anteriormente por los peritos, es decir, partiendo de la región del norte de aquella y del punto denominado Cabo Espíritu Santo en ésta. Al efecto, las comisiones de ingenieros ayudantes estarán listas para salir al trabajo el quince de Octubre próximo. En esta fecha estarán también arregladas y firmadas por los peritos las instrucciones que, según el artículo 4º de la convención de 20 de Agosto de 1888, deben llevar las referidas comisiones. Estas instrucciones serán formuladas en conformidad con los acuerdos consignados en el presente protocolo.

SEXTO.—Para el efecto de la demarcación, los peritos, ó en su lugar las comisiones de ingenieros ayudantes, que obran con las instrucciones que aquéllos les dieren, buscarán en el terreno la línea divisoria y harán la demarcación por medio de hitos de fierro de las condiciones anteriormente convenidas, colocando uno en cada paso ó punto accesible de la montaña que esté situado en la línea divisoria, y levantando un acta de la operación, en que se señalen los fundamentos de ella y de las indicaciones topográficas para reconocer en todo tiempo el punto fijado, aún cuando el hito hubiere desaparecido por la acción del tiempo ó los accidentes atmosféricos.

SÉPTIMO.—Los peritos ordenarán que las comisiones de in-

draw up with the assistant engineers a map which may help them to resolve the difficulty.

FOURTH—The demarcation of Tierra del Fuego shall commence simultaneously with that of the Cordillera, and shall start from the point called Cape Espíritu Santo. At that point, visible from the sea, there are three heights or hills of mediun elevation, of which the central or intermediary one, which is the highest, shall be taken as point of departure, and on its summit shall be placed the first landmark of the line of demarcation, which shall continue towards the south in the direction of the meridian.

FIFTH—The work of demarcation on the ground shall be undertaken next spring simultaneously in the Cordillera of the Andes and in Tierra del Fuego in the direction previously agreed upon by the experts, that is to say, starting from the northern region of the former, and from the point denominated Cape Espíritu Santo of the latter. To that effect the commissions of assistant engineers shall be ready to commence the work on the fifteenth next October. On that date the experts shall also have prepared and signed the instructions which the aforesaid commissions shall bear, according to article four of the convention of the twentieth August one thousand eight hundred and eighty eight. These instructions shall be framed in accordance with the agreements set forth in the present protocol.

SIXTH—For the purpose of demarcation, the experts, or in their stead the commissions of assistant engineers who act under the instructions given them by the former, shall seek on the ground the boundary line, and fix the demarcation by means of iron landmarks of the kind previously agreed upon, placing one in each pass or accessible point of the monntain which may be situated on the boundary line, and shall draw up a record of the operation, specifying the fundamental reasons of same, and the topographic indications for recognizing at all times the point fixed, although the landmark might have disappeared by the wear of time or atmospheric action.

SEVENTH—The experts shall direct the commissions of assistant

genieros ayudantes recojan todos los datos necesarios para diseñar en el papel, de común acuerdo, y con la exactitud posible, la línea divisoria que vayan demarcando sobre el terreno. Al efecto, señalarán los cambios de altitud y de azimut que la línea divisoria experimente en su curso; el orígen de los arroyos ó quebradas que se desprenden á un lado y otro de ella, anotando, cuando fuere dado conocerlo, el nombre de éstos, y fijarán distintamente los puntos en que se colocarán los hitos de demarcación. Estos planos podrán contener otros accidentes geográficos que, sin ser precisamente necesarios en la demarcación de límites, como el curso visible de los ríos al descender á los valles vecinos y los altos picos que se alzan á uno y otro lado de la línea divisoria, es fácil señalar en los lugares, como indicaciones de ubicación. Los peritos señalarán en las instrucciones que dieren á los ingenieros ayudantes, los hechos de carácter geográfico que sea útil recojer, siempre que ello no interrumpa ni retarde la demarcación de límites que es el objeto principal de la comisión pericial, en cuya pronta y amistosa operación están empeñados los dos gobiernos.

Octavo.—Habiendo hecho presente el perito argentino que, para firmar con pleno conocimiento de causa el acta de 15 de Abril de 1892, por la cual una sub-comisión mixta chileno-argentina, señaló en el terreno el punto de partida de la demarcación de límites en la cordillera de los Andes, creía indispensable hacer un nuevo reconocimiento de la localidad para comprobar ó rectificar aquella operación, agregando que este reconocimiento no retardaría la continuación del trabajo, que podría seguirse simultáneamente por otra sub-comisión, y, habiendo expresado, por su parte, el perito chileno, que aunque creía que esa era una operación ejecutada con estricto arreglo al Tratado, no tenía inconveniente en acceder á los deseos de su colega, como una prueba de la cordialidad con que se desempeñaban estos trabajos, han convenido los infrascriptos en que

engineers to collect all the necessary data to design on paper, of joint accord, and with all possible accuracy, the boundary line as they may demark it ou the ground. To that effect, they shall indicate the changes of altitude and azimuth which the boundary line may suffer in its course, the beginning of the streams or quebradas [25] that descend one side and the other, writing down the names of same whenever it were possible to know them, and shall distinctly fix the points on which the boundary landmarks are to be placed. These maps may contain other geographical accidents, which without being actually necessary in the demarcation of boundaries, such as the visible course of rivers when descending into the neighbouring valleys, and the high peaks that rise on one side and the other of the boundary line, are easily indicated in the places as signs of location. The experts in the instructions given to their assistant engineers shall point out such facts of a greographical character as it may be useful to collect, provided that this does not interrupt nor delay the demarcation of boundaries, which is the main object of the commission of experts, and upon which speedy and amicable operation both governments are intent.

EIGHTH—The Argentine expert having manifested that, in order to sign with full knowledge of the matter the record of 15th April 1892, by which a mixed Chilian Argentine commission fixed on the ground the point of departure of the demarcation of boundaries in the Cordillera of the Andes, he considered it indispensable to make a fresh reconnaissance of the locality in order to verify or rectify said operation, adding that this reconnaissance would not delay the progress of the work, which could be simultaneously continued by another subcommission, and the Chilian expert having on his part manifested that, although he believed that the operation had been carried out in strict conformity with the treaty, he had no objection to acquiesce in the wishes of his colleague as a proof of the cordiality with which this work was being performed,—the undersigned have agreed that a revision be made of what had been done, and that in the event of errors

se practique la revisión de lo ejecutado, y en que, caso de encontrarse error, se trasladará el hito al punto donde debió ser colocado, según los términos del Tratado de límites.

Noveno.—Deseando acelerar los trabajos de demarcación, y creyendo que esto podrá conseguirse con el empleo de tres sub-comisiones en vez de las dos que han funcionado hasta ahora, sin que haya necesidad de aumentar el número de los ingenieros ayudantes, los infrascriptos acuerdan que, en adelante, y mientras no se resuelva crear otras, habrá tres sub-comisiones, compuesta cada una de cuatro individuos, dos por parte de la República Argentina, y dos por parte de la de Chile, y de los auxiliares que, de común acuerdo, se consideraren necesarios.

Dècimo. — El contenido de las estipulaciones anteriores no menoscaba en lo más mínimo el espíritu del Tratado de limites de 1881, y se declara, por consiguiente, que subsisten en todo su vigor los recursos conciliatorios para salvar cualquiera dificultad, prescriptos por los artículos 1° y 6° del mismo.

Undècimo.—Entienden y declaran los mismos infrascriptos, que, tanto por la naturaleza de alguna de las precedentes estipulaciones, como para revestir las soluciones alcanzadas de un carácter permanente, el presente protocolo debe someterse previamente á la consideración de los congresos de uno y otro pais, lo cual se hará en las próximas sesiones ordinarias, manteniéndosele, entretanto, en reserva.

Los ministros infrascriptos, en nombre de sus respectivos gobiernos, y debidamente autorizados, firman el presente protocolo en dos ejemplares, uno para cada parte, y les ponen sus sellos. — (L. S.) *N. Quirno Costa.* — (L. S.) *Isidoro Errazúriz.*

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being found, the landmark shall be transferred to the point in which it should have been fixed according to the terms of the boundary treaty.

NINTH—With the desire of expediting the work of demarcation, and believing that this can be attained through the employment of three subcommisions instead of the two which up to the present have been working, without the need of increasing the number of assistant engineers, the undersigned agree that henceforward, as long as the creation of others should not be decided on, there shall be three sub-commissions, each one composed of four persons, two on the part of the Argentine Republic and two on the part of Chili, and of the auxiliaries which by mutual agreement might be considered necessary.

TENTH—The tenor of the preceeding stipulations does not in the least impair the spirit of the boundary treaty of 1881, and consequently it is hereby declared that the conciliatory means provided by Arts. 1 and 6 of same for obviating any difficulty subsist in full force.

ELEVENTH—The undersigned ministers understand and declare that, given the nature of some of the foregoing stipulations, and in order to invest with a permanent character the solutions arrived at, the present protocol shall be previously submitted to the consideration of the Congresses of both countries, the which shall be done in the next ordinary sessions, keeping it reserved in the meanwhile.

The undersigned ministers, in the name of their respective Governments, and duly authorized, sign the present protocol in duplicate, one for each party and affix their seals to same.—(L. S.) *N. Quirno Costa*—(L. S.) *Isidoro Errázuriz.*

Departamento de Relaciones Exteriores N°. 3042

Buenos Aires, Diciembre 11 de 1893.

Por cuanto:

El senado y cámara de diputados de la nación Argentina, reunido en congreso, etc.

Sancionan con fuerza de

LEY:

ARTÍCULO 1°.—Apruébase el protocolo de 1° de Mayo de 1893, firmado en la ciudad de Santiago por los plenipotenciarios de la república Argentina y de Chile, adicional y aclaratorio del Tratado de límites de 23 de Julio de 1881.

ART. 2°.—Comuníquese al poder ejecutivo.

Dada en la sala de sesiones en el congreso argentino, á dos de Diciembre del año mil ochocientos noventa y tres.

JORÉ E. URIBURU
Adolfo J. Labougle,
Secretario del senado.

FRANCISCO ALCOBENDAS
Alejandro Sorondo,
Secretario de la cámara de diputados.

Téngase por ley de la nación, comuníquese, publíquese é insértese en el registro nacional.

SAENZ PEÑA.
VALENTÍN VIRASORO.

Reunidos en el ministerio de relaciones exteriores de Chile el señor don Norberto Quirno Costa, enviado extraordinario y ministro plenipotenciario de la República Argentina, y el señor don Ventura Blanco, ministro del ramo, con objeto de efectuar el canje de las ratificaciones del protocolo concluído en Santiago el día 1° de Mayo del presente año, entre S. E. el presidente de la República Argentina y S. E. el presidente de la República de Chile, habiendo comparado cuidadosamente el texto de las referidas ratificaciones y encontrándolas conforme una á otra, practicaron, prévia presentación de los correspondientes plenos poderes, con esta fecha y en la forma usual, el canje referido. En prueba de lo cual firmaron la presente acta de canje en doble ejemplar, y la sellaron con sus sellos respectivos. Hecha en Santiago á los veintiún días del mes de diciembre del año de mil ochocientos noventa y tres. (L. S.) *N. Quirno Costa.*—(L. S.) *V. Blanco.*

Department of Foreign Affairs. N. 3042.

Buenos Aires 11th December 1893.

Whereas: The Senate and Chamber of Deputies of the Argentine Nation, assembled in Congress, etc.

Enact the following

LAW:

ARTICLE 1°—The Protocol of the 1st May 1893 signed in the City of Santiago by the Plenipotentiaries of the Argentine Republic and of Chili, additional to and explanatory of the boundary treaty of 23d July is hereby approved.

ART. 2°—Let it be communicated to the Executive Power.

Given in the Chamber of Sessions of the Argentine Congress on the 2d of December 1893.

JOSÉ E. URIBURU
Adolfo J. Labougle
Sec. to the Senate.

FRANCISCO ALCOBENDAS
Alejandro Sorondo
Sec. to the Chamber of Deputies.

Let it be held as law of the Nation, communicated, published and inserted in the National Registry.

SAENZ PEÑA
VALENTÍN VIRASORO.

Mr. Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and Mr. Ventura Blanco, Minister of the Department, having met in the Ministry of Foreign Affairs of Chili with the object of exchanging the ratifications of the Protocol concluded in Santiago on the 1st of May of the present year between His Excellency the President of the Argentine Republic and His Excellency the President of the Republic of Chili, they carefully compared the text of the above mentioned ratifications, and finding that they tallied with each other, after producing their respective full powers, they effected the exchange referred to, on this date and in the usual form. In witness whereof they signed the present act of exchange in duplicate, and sealed it with their respective seals. — Given in Santiago on the 21st of December 1893. — (L. S.) *N. Quirno Costa.* — (L. S.) *V. Blanco.*

ACTA DE 21 DICIEMBRE DE 1893

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Reunidos en el despacho de relaciones exteriores, el señor enviado extraordinario y ministro plenipotenciario de la república Argentina, doctor don Norberto Quirno Coosta y el señor ministro del ramo, don Ventura Blanco, convinieron en que los peritos expidieran las instrucciones del caso á las comisiones de ayudantes, las cuales saldrían para sus respectivos destinos, desde Santiago y Buenos Aires, el 10 de Enero próximo. — Hecha en Santiago, por duplicado, á los 21 días del mes de Diciembre de 1893.—(L. S.) *N. Quirno Costa.*—(L. S.) *V. Blanco.*

RECORD OF THE 21TH OF DECEMBER 1893

Doctor Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and Mr. Ventura Blanco, Minister of the Department, having met in the Department of Foreign Affairs, they agreed that the experts should issue the necessary instructions to the commissions of assistants which were to leave for their respective destinations from Santiago and Buenos Aires on the 10th of next January. — Given in Santiago, in duplicate, on the 21st of December 1893. — (L. S.) *N. Quirno Costa.* — (L. S.) *V. Blanco.*

ACUERDO DE 1895

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En Santiago de Chile, á los seis días del mes de Septiembre de mil ochocientos noventa y cinco, reunidos en la secretaría de relaciones exteriores, el señor don Norberto Quirno Costa, enviado extraordinario y ministro plenipotenciario de la república Argentina y el señor don Claudio Matte, ministro del ramo, debidamente autorizados dijeron: que animados sus respectivos gobiernos del propósito de que la demarcación de límites entre ambos países continúe sin interrupción, cumpliéndose los pactos internacionales de 1881, 1888 y 1893, acordaban lo siguiente:

1º.—Los peritos dispondrán que las sub-comisiones mixtas de ayudantes demarcadores continúen sus trabajos de deslinde, saliendo aquellos para sus destinos respectivamente de Buenos Aires y de Santiago del 15 de octubre al 1º de Noviembre próximo.

2º.—Dichas sub-comisiones proseguirán sus trabajos desde los puntos en que los suspendieron en la última temporada.

3º.—Si en el curso de ellos las sub-comisiones mixtas no pudieran ponerse de acuerdo en la ubicación de alguno ó algunos hitos divisorios, levantarán, en cada caso, el plano respectivo, y, con el estudío del terreno, lo remitirán á los peritos, para que éstos, en uso de sus facultades, se empeñen en resolver la divergencia; aún cuando se presentara el desacuerdo, las sub-comisiones continuarán la demarcación desde el punto más inmediato á aquel

AGREEMENT OF 1895

In Santiago, Chili, on the sixth of September 1895, Mr. Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, and Mr. Claudio Matte, Minister of the Department, duly authorized, having met in the Department of Foreign Affairs, manifested that: their respective governments being animated by the purpose that the demarcation of boundaries between both countries should continue without interruption, in compliance with the international conventions of 1881, 1888 and 1893, agreed as follows:

1.—The experts shall direct the mixed sub-commissions of demarking assistants to continue their work of delimitation, the former to start for their respective destinations from Buenos Aires and from Santiago between the 15th of October and the 1st of November next.

2.—Said sub-commissions shall resume their work from the points where they suspended it in the last season.

3.—If, during the work, the mixed sub-commissions should fail to agree upon the location of one or more of the boundary marks, they shall in each case draw up the respective map, and along with the survey of the ground, they shall forward it to the experts, so that the latter, exercising their faculties, may endeavour to resolve the difference; even in the case of disagreement, the sub-commissions shall proceed with the demarcation from the point nearest to that in which the difficulty has arisen, and

en que se haya suscitado la dificultad, y en el mismo rumbo de sus trabajos, pues el propósito de los dos gobiernos es que no se suspendan hasta su terminación, en toda la línea divisoria.

4°.—Si los peritos no llegaran á terminar las divergencias que pudieran presentarse en el curso de la demarcación, elevarán todos los antecedentes á sus respectivos gobiernos á fin de que éstos las solucionen con arreglo á los tratados vigentes entre ambos países.

Redactado el presente acuerdo en dos ejemplares de igual tenor, los señores ministros lo firmaron y le pusieron sus sellos.—(L. S.) *N. Quirno Costa.*—(L. S.) *Claudio Matte.*

Departamento de Relaciones Exteriores

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Buenos Aires, Octubre, 21 de 1895.

Aprobado. Comuníquese, dése al Boletín Oficial é insértese en el R. N.

URIBURU.
A. ALCORTA.

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in the same direction of their work, as it is the purpose of both governments that same be not suspended till its completion on the whole boundary line.

4.—Should the experts fail to settle the differences that might arise in the course of the demarcation, they shall present all the antecedents to their respective governments, in order that the latter may solve them in conformity with the treaties in force between both countries.

The present agreement, drawn up in two copies of the same tenor, was signed by the Ministers, who affixed their seals thereunto.—(L. S.) *N. Quirno Costa.*—(L. S.) *Claudio Matte.*

Department of Foreign Affairs

Bu nos Aires, 21st of October 1896.

Let it be approved, communicated, published in the Official Gazette and inserted in the National Registry.

URIBURU.
A. ALCORTA.

ACUERDO DE 1896

—

En la ciudad de Santiago de Chile, á diez y siete días del mes de Abril de mil ochocientos noventa y seis, reunidos en la sala del despacho del ministerio de relaciones exteriores, el señor don Norberto Quirno Costa, enviado extraordinario y ministro plenipotenciario de la república Argentina en Chile y el señor don Adolfo Guerrero, ministro del ramo, expusieron: que los gobiernos de la republica Argentina y de la república de Chile, deseando facilitar la leal ejecución de los tratados vigentes que fijan un límite inconmovible entre ambos países, restablecer la confianza en la paz y evitar toda causa de conflicto, persiguiendo, como siempre, el propósito de procurar soluciones por avenimientos directos, sin perjuicio de hacer efectivos los otros recursos conciliatorios que esos mismos pactos prescriben, han llegado al acuerdo que contiene las bases siguientes:

PRIMERA.—Las operaciones de demarcación del límite entre la república Argentina y la república de Chile, que se ejecutan en conformidad al tratado de 1881 y al protocolo de 1893, se extenderán en la cordillera de los Andes hasta el paralelo veintitrés de latitud austral, debiendo trazarse la línea divisoria entre este paralelo y el veintiseis grados, cincuenta y dos minutos y cuarenta y cinco segundos, concurriendo á la operación ambos gobiernos y el gobierno de Bolivia que será solicitado al efecto.

SEGUNDA.—Si ocurriesen divergencias entre los peritos al fijar en la cordillera de los Andes los hitos divisorios al sur del paralelo veintiseis grados, cincuenta y dos minutos y cuarenta y cinco

AGREEMENT OF 1896

In the city of Santiago, Chili, on the 17th of April 1896, Mr. Norberto Quirno Costa, Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic in Chili, and Mr. Adolfo Guerrero, Minister of the Department, having met in the Office of Foreign Affairs, manifested that the Governments of the Argentine Republic and the Republic of Chili, being desirous of facilitating the loyal execution of the treaties in force which fix an immovable[26] boundary between both countries, of reestablishing confidence in peace and of avoiding all cause of conflict, pursuing as always the purpose of arriving at solutions by direct understanding, without prejudice of appealing to the other conciliatory recourses provided for by said covenants, have come to an agreement which contains the following bases:

FIRST.—The operations of the demarcation of the boundary between the Argentine Republic and the Republic of Chili which are being carried out conformably with the treaty of 1881 and protocol of 1893, shall extend in the Cordillera of the Andes as far as parallel 23 S., the boundary line between this parallel and that of 26°, 52′, 45″ S., to be traced with the concurrence of both governments in the operation, and of the government of Bolivia which shall be invited to that effect.

SECOND.—Shou'd differences arise between the experts when fixing in the Cordillera of the Andes the boundary marks south of parallel 26°, 52′, 45″ S. and in case they could not be amicably

segundos y no pudieran allanarse amigablemente por acuerdo de ambos gobiernos, quedarán sometidas al fallo del gobierno de su majestad Británica, á quien las partes contratantes designan, desde ahora, con el carácter de árbitro encargado de aplicar estrictamente, en tales casos, las disposiciones del Tratado y protocolo mencionados, prévio el estudio del terreno, por una comisión que el árbitro designará.

TERCERA.—Los peritos procederán á efectuar el estudio del terreno en la región vecina al paralelo cincuenta y dos de que trata la última parte del artículo segundo del protocolo de 1893, y propondrán la línea divisoria que allí debe adoptarse si resultare el caso previsto en dicha estipulación. Si hubiere divergencia para fijar esta línea, será también resuelta por el árbitro designado en este convenio.

CUARTA.—Sesenta días después de producida la divergencia, en los casos á que se refieren las bases anteriores, podrá solicitarse la intervención del árbitro por ambos gobiernos de común acuerdo, ó por cualquiera de ellos separadamente.

QUINTA.—Convienen ambos gobiernos en que la actual ubicación del hito de San Francisco entre los paralelos veintiseis y veintisiete, no sea tomada en consideración como base ó antecedente obligatorio para la determinación del deslinde en esa región, estimándose las operaciones y trabajos efectuados en ella, en diversas épocas, como estudios para la fijación definitiva de la línea, sin perjuicio de realizarse otros que los peritos tuvieran á bien disponer.

SEXTA—Los peritos, al reanudar sus trabajos en la próxima temporada, dispondrán las operaciones y estudios á que se refieren las bases primera y tercera de este acuerdo.

SÉPTIMA—Convienen asi mismo ambos gobiernos en ratificar el acuerdo tercero del acta de 6 de Septiembre de 1895, para la prosecución de los trabajos de demarcación, en el caso de que se presentara algún desacuerdo, á fin de que estos trabajos, como es el propósito de las partes contratantes, nunca sean interrumpidos.

settled by joint accord of both governments, they shall be submitted to the decision of the government of Her Britannic Majesty which the contracting parties from this moment appoint in the character of arbitrator entrusted with the strict application in such cases of the provisions of the aforesaid treaty and protocol, after the ground has been examined by a commission appointed by the arbitrator.

THIRD.—The experts shall proceed to effect the examination of the ground in the region near parallel 52° S. dealt with in the latter part of Article 2 of the protocol of 1893, and shall propose the boundary line which is to be adopted there, should the case arise which is foreseen in said stipulation. In the event of any difference as to the fixing of this line, it shall also be decided by the arbitrator appointed in this agreement.

FOURTH.—Sixty days after the difference has arisen in the cases referred to in the preceding bases, the intervention of the arbitrator may be solicited of common accord by both governments or by either of them separately.

FIFTH.—Both governments agree that the present location of the San Francisco boundary mark between parallels 26° and 27° S. shall not be considered as a basis or a binding antecedent for determining the delimitation of that region, the operations and the work therein effected at different times to be regarded as examinations for the definite fixing of the line, without debarring the experts from realizing others that they may think fit to direct.

SIXTH.—The experts on resuming their work next season shall dispose the operations and surveys referred to in bases first and third of this agreement.

SEVENTH.—Both governments likewise agree to ratify the third resolution of the record of 6th September 1895 for the prosecution of the work of demarcation in the event that any disagreement should arise, so that said work, as intended by the contracting parties, may suffer no interruption.

OCTAVA—Dentro del término de sesenta días, después que hubiere sido firmado el presente acuerdo, los representantes diplomáticos de la República Argentina y de la República de Chile, acreditados cerca del gobierno de Su Majestad Británica, solicitarán, conjuntamente, de éste, la aceptación del cargo de árbitro que se le confiere, á cuyo efecto los respectivos gobiernos impartirán las instrucciones necesarias.

NOVENA—Los gobiernos de la República Argentina y de la República de Chile, abonarán por mitad los gastos que requiera el cumplimiento de este acuerdo.

Los ministros infrascriptos, en nombre de sus respectivos gobiernos y debidamente autorizados, firman el presente acuerdo en dos ejemplares, uno para cada parte, y les ponen sus sellos. —(L. S.) *N. Quirno Costa*—(L. S.)—*Adolfo Guerrero.*

Departamento de Relaciones Exteriores

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Buenos Aires, Abril 27 de 1896.

Aprobado, debiendo publicarse una vez que se haya dado conocimiento al honorable congreso.

URIBURU.
AMANCIO ALCORTA.

EIGHT.—Within the term of sixty days after signing the present agreement, the diplomatic representatives of the Argentine Republic and of the Republic of Chili accredited to the Government of Her Britannic Majesty, shall jointly solicit same to accept the office of arbitrator conferred on it, to which effect the respective governments shall impart the necessary instructions.

NINTH.—The Governments of the Argentine Republic and of the Republic of Chili shall each pay one half of the expenses entailed by the fulfilment of this agreement.

The undersigned ministers in the name of their respective governments, and duly authorized, sign the present agreement in two copies, one for each party, and affix their seals thereunto. (L. S.) *N. Quirno Costa.*—(L. S.) *Adolfo Guerrero.*

Department of Foreign Affairs

Buenos Aires, 27th of April 1896.

Approved. Let it be published as soon as it has been laid before the Hon. Congress.

URIBURU
AMANCIO ALCORTA

ACTA DE LOS PERITOS

DE 1º DE MAYO DE 1897

En la ciudad de Santiago de Chile, á 1º de Mayo de 1897, reunidos en la oficina internacional de límites los peritos que suscriben, don Francisco P. Moreno, por parte de la República Argentina, y don Diego Barros Arana, por parte de la República de Chile, después de cambiar algunas ideas acerca de los medios de impulsar y apresurar los trabajos de demarcación para procurar de hallarse en aptitud de resolver sobre la línea general de la frontera al término de la temporada venidera de operaciones, satisfaciendo así los anhelos de los gobiernos que representan, acordaron, en uso de la facultad que les confiere la cláusula 2ª del convenio entre la República Argentina y Chile, de fecha 20 de Agosto de 1888:

1º—Solicitar de sus respectivos gobiernos el nombramiento de tres ayudantes primeros y de tres segundos, los cuales formarán tres nuevas sub-comisiones que trabajarán en la cordillera de los Andes. Estas sub-comisiones verificarán sus operaciones: la primera, desde el grado cuarenta y uno hasta el cuarenta y cuatro; la segunda entre el cuarenta y cuatro y el cuarenta y siete y la tercera entre el cuarenta y siete y el cuarenta y nueve treinta aproximadamente.

2º—Solicitar igualmente de sus respectivos gobiernos el nombramiento del número de auxiliares que sean necesarios para

RECORD OF THE EXPERTS

1st OF MAY 1897

In the city of Santiago, Chili, on the 1st of May 1897, the undersigned experts, Mr. Francisco B. Moreno on behalf of the Argentine Republic, and Mr. Diego Barros Arana on that of the Republic of Chili, having met in the International Bureau of Boundaries, after exchanging ideas regarding the means of hastening and giving impulse to the work of demarcation, with the view of being enabled to decide on the general frontier line at the end of the next season of operations, thus satisfyng the desires of the governments they represent, they agreed, exercising the faculty conferred on them by clause 2d of the convention between the Argentine Republic and Chili dated twentieth of August 1888:

1.—To solicit from their respective governments the appointment of three first and three second class assistants, who shall form three new sub-commissions to work in the Cordillera of the Andes. Said sub-comissions shall realize their operations: the first from latitude 41° to 44° S.; the second from latitude 44° to 47° S. and the third from latitude 47° to 49°, 30′ S. approximately.

2.—To solicit likewise from their respective governments the appointment of the number of auxiliaries required for carrying

llevar con toda actividad los trabajos de las nuevas sub-comisiones, así como los de las actualmente existentes.

3º—Si durante las operaciones se suscitaren divergencias entre los respectivos ayudantes sobre la ubicación de la línea divisoria, se proseguirán siempre, sin interrupción, los trabajos de reconocimiento y relevamiento del terreno hasta el término de la temporada.

Los señores peritos levantaron y firmaron la presente acta en dos ejemplares.—*F. P. Moreno.—Diego Barros Arana.—Diego González Victorica.—Alejandro Bertrand.*

on with all activity the work of the new sub-commissions, as well as that of those at present existing.

3.—If, during the operations, differences should arise between the respective assistants as to the location of the boundary line, the work of reconnaissance and survey of the ground shall be continued without interruption to the end of the season.

The experts drew up and signed two copies of the present record.—*F. P. Moreno—Diego Barros Arana—Diego Gonzalez Victorica—Alejandro Bertrand.*

MINISTERIO DE RELACIONES EXTERIORES

DECRETO APROBANDO LAS ACTAS FIRMADAS EN SANTIAGO DE CHILE POR EL MINISTRO ARGENTINO DOCTOR NORBERTO PIÑERO Y EL MINISTRO DE RELACIONES EXTERIORES DE CHILE, REFERENTES Á LAS DIVERGENCIAS DE LOS PERITOS Y Á ARBITRAJE.

Acta primera

Reunidos en el Ministerio de Relaciones Exteriores de Chile, el enviado Extraordinario y Ministro Plenipotenciario de la República Argentina, señor don Norberto Piñero, y el Ministro del ramo, señor don Juan José Latorre, debidamente autorizados, con el propósito de considerar las actas y antecedentes relativos á la línea general de frontera, elevados por los peritos, y de asegurar la fiel ejecución de los tratados y ajustes internacionales vigentes, el señor Ministro de Relaciones Exteriores declaró: que el Gobierno de Chile ampara y sostiene en todas sus partes la linea general de frontera, señalada por su perito, en las actas suscriptas con el señor perito argentino el 29 de Agosto, 1° y 3 de Septiembre del presente año.

El señor Ministro Plenipotenciario declaró, á su vez, que su Gobierno ampara y sustenta también en todas sus partes la línea general de frontera señalada por su perito en las actas citadas.

Con el propósito de facilitar el exámen y resoluciones de todos los puntos que abraza la cuestión de límites, los señores Minis-

DFPARTMENT OF FOREIGN AFFAIRS

DECREE APPROVING THE RECORD SIGNED IN SANTIAGO, CHILI, BY THE ARGENTINE MINISTER DOCTOR NORBERTO PIÑERO AND THE MINISTER OF FOREIGN AFFAIRS OF CHILI, RELATIVE TO THE EXPERTS' DIVERGENCIES AND TO ARBITRATION.

First record

In the Department of Foreign Affairs of Chili, the Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic Don Norberto Piñero and the Minister of the Department Don Juan José Latorre, duly authorized, having met for the purpose of taking into consideration the records and antecedents relating to the general frontier-line laid before them by the experts, and of assuring the faithful execution of the international treaties and conventions in force, the Minister of Foreign Affairs declared: That the Government of Chili, upholds and sustains in all its parts the general frontier-line presented by its expert in the records signed with the Argentine expert on the 29th of August, 1st and 3d of September of the current year.

The Minister Plenipotentiary in his turn declared that his Government also upholds and sustains in all its parts the general frontier-line presented by its expert in the acts referred to.

With the purpose of facilitating the examination of and decisions on all the points comprised in the boundary question, the

tros convinieron en tratar separadamente de cada una de sus partes, á saber:

A. De la relativa al límite en la región comprendida entre los paralelos veintitrés, y veintiseis grados, cincuenta y dos minutos, cuarenta y cinco segundos de latitud sur.

B. De la relativa al límite desde el paralelo veintiseis grados, cincuenta y dos minutos, cuarenta y cinco segundos, hasta las proximidades del paralelo cincuenta y dos.

C. De la relativa al límite en la región vecina al paralelo cincuenta y dos, á que se refiere la última cláusula del artículo 2º del protocolo de 1893.

En cada caso deberá empezarse por la lectura de las actas de los peritos.

Con lo que terminó la conferencia, firmándose dos ejemplares de igual tenor de la presente acta, á quince de Septiembre de mil ochocientos noventa y ocho.—*N. Piñero.—J. J. Latorre.*

Segunda acta

Reunidos en el Ministerio de Relaciones Exteriores de Chile, el Enviado Extraordinario y Ministro Plenipotenciario de la República Argentina, señor don Norberto Piñero, y el Ministro del ramo, señor don Juan José Latorre, leídas las actas de los señores peritos de la República Argentina y de Chile, de 1º y 3 del presente mes, relativas al límite entre ambos países, en la región comprendida entre los paralelos 23º, y 26º, 52' 45" á que se refiere la base 1ª del acuerdo de 17 de Abril de 1896, examinadas las líneas propuestas por aquellos funcionarios, y no habiendo sido posible arribar á conclusión alguna común, se acordó suspender la consideración del asunto.

Para constancia de lo anterior, firman la presente acta en doble ejemplar á 17 de Septiembre de 1898.—*N. Piñero.—J. J. Latorre.*

Tercera acta

Reunidos en el Ministerio de Relaciones Exteriores de Chile, el Enviado Extraordinario y Ministro Plenipotenciario de la Re-

Minister agreed to deal separately with each one of its parts, to wit:

A. That relating to the boundary in the region comprehended between parallels 23° and 26° 52′, 45″ lat. S.

B. That relating to the boundary from parallel 26°, 52′, 45″ to the proximity of parallel 52° lat. S.

C. That relating to the boundary region close to parallel 52° S. which is referred to in the last clause of art. 2 of the protocol of 1893.

In each case they shall begin by reading the records of the experts.

With this the conference ended, two copies of equal tenor of the present record being signed on the fifteenth of September of 1898.—*N. Piñero.—J. J. Latorre.*

Second record

The Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, Don Norberto Piñero and the Minister of the Department Don Juan José Latorre, having met in the Department of Foreign Affairs of Chili, and having read the records of the experts of the Argentine Republic and of Chili dated the 1st and 3d of the current month, relative to the boundary between both countries, in the region comprised between parallel 23° and 26°, 52′, 45″ referred to in base 1 of the agreement of 17th April 1896, and having examined the lines proposed by said functionaries without being able to arrive at any joint conclusion, they agreed to suspend the consideration of the matter.

In witness whereof they signed the present record in duplicate on the 17th of September 1898.—*N. Piñero.—J. J. Latorre.*

Third record

The Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, Don Norberto Piñero and the Minister of the Department Don Juan José Latorre, having met in the Department of Foreign Affairs of Chili and having read the records of the experts of the Argentine Republic and of Chili dated the

pública Argentina, señor don Norberto Piñero, y el Ministro del ramo, señor don Juan José Latorre, leidas las actas de los señores peritos de la República Argentina y de Chile, de 29 de Agosto y 3 de Septiembre,, en las que dichos funcionarios han consignado la línea que, á juicio de cada uno de ellos, debe separar á la República Argentina de la República de Chile, desde el paralelo 26° 52′ 45″ de latitud sur, hasta la región vecina del paralelo 52°, se comprobó lo siguiente:

1° Que la línea del perito chileno arranca desde el « Paso de San Francisco » y la del perito argentino desde «Pirca de Indios».

2° Que las líneas de ambos peritos concuerdan desde el cerro de «Tres Cruces» (cumbre sur) hasta el cerro de « Perihuaico » en los puntos y trechos designados con los números diez á doscientos cincuenta y seis de la lista del perito chileno, y tres á doscientos sesenta y seis de la lista del perito argentino; y, además, en los puntos y trechos designados con los números doscientos sesenta y tres á doscientos setenta de la lista del perito chileno, y doscientos setenta y cinco á doscientos ochenta y uno de la del perito argentino, y, por último, en los señalados con los números trescientos treinta y uno y trescientos treinta y dos por el primero y trescientos cuatro y trescientos cinco por el segundo.

3° Que la línea del perito chileno, diverge de la del perito argentino en los puntos y trechos designados por el primero con los números uno á nueve, y uno y dos por el segundo; en los puntos y trechos designados por el primero con los números doscientos cincuenta y siete á doscientos sesenta y dos y doscientos sesenta y siete á doscientos setenta y cuatro por el segundo; en los puntos y trechos designados con los números doscientos setenta y uno á trescientos treinta por el primero, y doscientos ochenta y dos á trescientos tres por el segundo; y en los puntos y trechos designados con los números trescientos treinta y tres á trescientos cuarenta y ocho por el primero y con el número trescientos seis y demás puntos sin número que siguen en la lista del segundo, haciéndose constar que estos úl-

29th of August and 3d of September in which said functionaries have set down the line which in the opinion of each of them should separate the Argentine Republic from the Republic of Chili from parallel 26°, 52′, 45″ lat. S. to the region close to parallel 52°, the following was verified:

1.—That the line of the Chilian expert starts from «Pass San Francisco» and that of the Argentine expert from «Pirca de Indios».

2.—That the lines of both experts coincide from mount «Tres Cruces» (southern crest) to mount «Perihuaico», in the points and stretches marked with numbers 10 to 256 of the Chilian expert's list, and 3 to 266 of the Argentine expert's list; and also in the points and stretches marked with numbers 263 to 270 of the Chilian expert's list, and 275 to 281 of that of the Argentine expert, and finally in those marked with numbers 331 and 332 by the former, and 304 and 305 by the latter.

3.—That the line of the Chilian expert diverges from that of the Argentine expert in the point and stretches marked by the former with numbers 1 to 9 and 1 and 2 by the latter; in the points and stretches marked by the former with numbers 257 to 262 and 267 to 274 by the latter; in the points and stretches marked with numbers 271 to 330 by the former, and 282 to 303 by the latter; in the points and stretches marked with numbers 333 to 348 by the former, and with number 306 and the rest of the points without number that follow in the list of the latter, it being recorded that these last points and stretches of either expert are the same dealt with in the record of the 1st of September, relative to the boundary in the region close to parallel 52°.

The Minister Plenipotentiary of the Argentine Republic stated: that in the communication accompanying the antecedents relative to the general boundary-line, the Argentine expert affirms that the points and stretches marked by the Chilian expert with numbers 1 to 9 included, 278 to 330 included and 333 to 348 included also, are not situated in the Cordillera de los Andes, as ordered by the treaties and in the form which they establish.

timos puntos y trechos de la lista de uno y otro perito son los mismos de que trata el acta de primero de Septiembre, relativa al límite en la región vecina al paralelo cincuenta y dos.

El señor Ministro Plenipotenciario de la República Argentina expuso: que, en la comunicación con que le ha elevado los antecedentes relativos á la línea general de frontera, el señor perito argentino le afirma que los puntos y trechos señalados por el señor perito de Chile con los números uno á nueve, inclusive, doscientos setenta y ocho á trescientos treinta, inclusive, y trescientos treinta y tres á trescientos cuarenta y ocho inclusive, también, no se encuentran situados en la Cordillera de los Andes, como lo ordenan los tratados y en la forma que ellos establecen. Invita, por eso, al Gobierno de Chile á reconsiderarlos después de un nuevo estudio.

El Ministro de Relaciones Exteriores de Chile, contestó: que el señor perito chileno ha comunicado á su Gobierno que los puntos y trechos á que acaba de referirse el señor Ministro argentino se encuentran situados en la Cordillera de los Andes, como lo ordenan los tratados, y en la forma que ellos establecen. Desearía, por eso, que el señor Ministro argentino no insistiera en pedir nuevos estudios sobre esos puntos y trechos, y que se tomaran en consideración como las otras divergencias.

En vista de las anteriores declaraciones contradictorias, que plantean una cuestión que sólo el Arbitro puede resolver, y no habiendo sido posible arribar á arreglo alguno directo, el señor Ministro de Relaciones Exteriores de Chile y el señor Enviado Extraordinario y Ministro Plenipotenciario de la República Argentina, convinieron, en nombre de sus respectivos Gobiernos, en remitir al de Su Majestad Británica copia de la presente acta, de las actas de los peritos leídas y de los tratados y acuerdos internacionales vigentes, para que, con sujeción á la base segunda del compromiso del 17 de Abril de 1896, resuelva las divergencias de que se ha dejado constancia precedentemente.

Convinieron, por fin, en que la entrega de los documentos

Therefore he invites the Government of Chili to reconsider them after a new study of same.

The Minister of Foreign Affairs of Chili replied: that the Chilian expert had communicated to the Governmen that the points and stretches just mentioned by the Argentine Minister are situated in the Cordillera de los Andes, as ordered by the treaties, and in the form which they establish. He would consequently wish that the Argentine Minister did not insist on requesting new studies of those points and stretches and that they shall be taken into consideration as the other divergencies.

In view of the foregoing contradictory declarations which raise a question that only the arbitrator can decide, and not having been able to arrive at any direct arrangement, the Minister of Foreign Affairs of Chili and the Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic agree, in the name of their respective governments, to remit to that of Her Britannic Majesty a copy of the present record, of the records of the experts which have been read and of the treaties and international agreements in force, in order that, subject to base II of the compromise dated 17th April 1896, said government may decide the divergencies which have been recorded above.

Finally they agreed that the above mentioned documents shall be delivered to the Government of Her Britannic Majesty by the diplomatic representatives of the Argentine Republic and of the Republic of Chili accredited to said Government, who shall manifest to same that, the case foreseen in the above quoted base II of the agreement of the 17th April 1896 having arisen, it may proceed to appoint the commision that is to verify the previous study of the ground and resolve all the divergencies together and in one decision.

In witness whereof, two copies of the same tenor of the present record were signed on the 22nd September 1898.—*N. Piñero*—*J. J. Latorre.*

mencionados, al Gobierno de Su Majestad Británica, se hará por intermedio de los representantes diplomáticos de la República Argentina y de la República de Chile, ante aquel Gobierno, quienes le expresarán que, habiendo llegado el caso previsto en la segunda base citada del acuerdo del 17 de Abril de 1896, proceda á designar la comisión que deberá verificar el estudio previo del terreno y á resolver las divergencias en conjunto y en un solo fallo.

Para constancia, se firman dos ejemplares de un tenor de la presente acta, á veintidos de Septiembre de mil ochocientos noventa y ocho.—*N. Piñero.—J. J. Latorre.*

Cuarta acta

Reunidos en el Ministerio de Relaciones Exteriores de Chile, el Enviado Extraordinario y Ministro Plenipotenciario de la República Argentina, señor don Norberto Piñero, y el Ministro del ramo, señor don Juan José Latorre, leída el acta de los peritos de fecha primero del corriente mes de Septiembre, relativa á la línea que debe separar á la República Argentina de la República de Chile, en la región vecina al paralelo 52° de latitud sur, y en vista de las divergencias de los mismos peritos que aparecen en dicha acta, tanto respecto del hecho de si la Cordillera de los Andes se interna ó no, total ó parcialmente, en los canales de Pacífico, como respecto de la línea divisoria que allí deba adoptarse, para dejar á Chile las costas de esos canales; y no habiendo sido posible avenimiento alguno directo, el señor Ministro Plenipotenciario argentino y el señor Ministro de Relaciones Esteriores de Chile, en nombre de sus respectivos Gobiernos, convinieron en remitir al de Su Majestad Británica, en la forma que determina otra acta de esta fecha, copia de la presente acta y de la de los peritos antes mencionada, para que, con arreglo á la base tercera del compromiso del 17 de Abril de 1896, resuelva las citadas divergencias y determine la línea divisoria en la región nombrada, previo el estudio del terreno por la comisión que designará al efecto.

Fourth record

The Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, Don Norberto Piñero, and the Minister of Foreign Affairs of Chili, Don Juan José Latorre, having met in the Department of Foreign Affairs, and having read the record of the experts dated the 1st of the current month of September regarding the line which is to separate the Argentine Republic from the Republic of Chili in the region close to parallel 52° lat. S, and in view of the same expert's divergencies which appear in said record, both as to the fact whether the Cordillera de los Andes penetrates or not,—totally or partially into the channels of the Pacific, and as to the divisional line which should be adopted there in order to leave to Chili the coasts of said channels; and no direct understanding having been possible, the Argentine Minister Plenipotentiary and the Minister of Foreign Affairs of Chili, in the name of their respective governments, agreed to remit to that of Her Britannic Majesty, in the form provided by another record of this date, a copy of the present one and also of the above-mentioned one of the experts, in order that, subject to base III of the compromise of the 17th April 1896, said government may decide the divergencies cited, and determine the divisional line in the region above named, the ground being previonsly studied by the commission that it will appoint to that effect.

In witness whereof, two copies of equal tenor of the present record are signed in Santiago on the 22d of September 1898.—*N. Piñero—J. J. Latorre.*

Para constancia, se firman dos ejemplares de igual tenor de la presente acta, en Santiago, á los veintidos días del mes de Septiembre de 1898.—*N. Piñero—J. J. Latorre.*

Buenos Aires, Octubre 11 de 1898.

El Presidente de la República,

DECRETA:

Artículo 1º—Apruébase las actas firmadas en la ciudad de Santiago de Chile con fechas 15, 17 y 22 de Septiembre del corriente año, por el Enviado Extraordinario y Ministro Plenipotenciario de la República Argentina, doctor don Norberto Piñero, y el Ministro de relaciones Exteriores de Chile, don J. J. Latorre, determinando las divergencias suscitadas por los respectivos peritos al fijar la línea general de frontera, las cuales no han podido ser allanadas por un avenimiento directo de los Gobiernos, y en mérito de lo que, resuelven remitirlas al de Su Majestad Británica, á los efectos del artículo 2º del acuerdo de 17 de Abril de 1896.

Art. 2º—Comuníquese, publíquese en el Boletín Oficial y dése al Registro Nacional.

URIBURU.
A. Alcorta.

Buenos Aires, 11th October 1898.

The President of the Republic,

DECREES:

Art. 1.—Let the records be approved which determine the divergencies raised by the experts on fixing the general frontier line, and which the governments, on account of their being unable to settle said divergencies by a direct understanding, resolve to remit to the government of Her Britannic Majesty, to the effects of Art. 2 of the agreement of 2d April 1896, said records having been signed in Santiago, Chili, under date of 15th, 17th and 22d September of the current year by the Envoy Extraordinary and Minister Plenipotentiary of the Argentine Republic, Doctor Don Norberto Piñero and the Minister of Foreign Affairs of Chili, Don J. J. Latorre.

Art. 2.—Let it be communicated, published in the Official Gazette and inserted in the National Registry.

URIBURU
A. ALCORTA.

NOTES

Note n. 1.

«BOUNDARY» (page 2)

§ 46.—The word «limit», in the translation of the «State Papers», though a synonym of «boundary», is not the one most generally employed in the University text books and other scientific works, nor in the treaties:

In the index (page 1371) of vol. 72 of said «State Papers», we read the words «boundaries» referring precisely to the treaty between the Argentine Republic and Chili.

In confirmation of the above, HUGHES, *Advanced Text Book of Geography*, — STEWART, *Modern Geography*, and others, may be consulted.

Note n. 2.

LATITUDE 52° S. (page 3)

§ 47.—The text of the treaty does not express whether the latitude is north or south, referring of course to the latter, because parallel of latitude 52° N. is to be found in the northern hemisphere. We have consequently translated: «as far as parallel of latitude 52° S.», following HUGHES (Op. cit., page 17), MURPHY AND JEFFERS *Nautical Routme*, page 17, and others.

It might be correctly said: «as far as latitude 52° S.» as in books of *Geodesy, Navigation and Exploration.* See for instance FROME on *Trigonometrical Survey*, page 269; RAPER, *Practice of Navigation and Nautical Astronomy*, page 111; DARWIN, *Naturalist's Voyage round the world*, pages 236/7, &c. However the former version has been preferred as it corresponds literally to the Spanish phrase, besides being employed in the treaties (see Convention between Great Britain and the Netherlands, 20th of June 1891, *(State Papers*, vol. 83, page 42).

Note n. 3.

CÓRDILLERA, (page 3)

§ 48.—The word «Cordillera» has been addopted in the English language, and even the adjective «cordilleran» is used by authors who deal with the Rocky Mountains. The *Century Dictionary and Cyclopedia* (verb. «Cordillera»): «a chain or ridge of mountains, formerly also a long straight elevated tract of land..... a continuous ridge or range of mountains. As a name, it was first applied to the ranges of the Andes («las cordilleras de los Andes», the chains of the Andes), then to the continuation of these ranges into Mexico and further north. For convenience, it is now agreed among physical geographers to call the complex of ranges embraced between, and including, the Rocky Mountains and the Sierra Nevada, and their extension north into British Columbia, the *Cordilleras;* these ranges occupying a similar continental position in South America, are called simply the Andes. The entire western mountain side of North America is called the *Cordilleran region*....

§ 49.—*Cordilleran*, — pertaining to, or situated, in the Cordilleras.

The official English translations of the treaties employ the word.

Note n. 4.

MOST ELEVATED CRESTS (page 4)

§ 50.—The *State Papers* suppress the adjective «most elevated», and translate simply «crest» in the singular (vol. 72, p. 1104). This is not correct, because the principal chain of the Andes has sometimes several crests, and the treaty 1881 establishes that the most elevated of them that may divide the waters shall be selected.

§ 51.—The *Foreign Relations* of the United States (volume for 1881, page 12), translate «the highest peaks». The word «peak», according to the *Century Dictionary*, means «a projecting point... the end of any thing that terminates in a point;... 2.—A precipitous mountain; a mountain with steeply inclined sides, or one which is particularly conspicuous on account of its height above the adjacent region, or *because more or less isolated*»;—(as happens with the Aconcagua and the Mercedario peaks, which the experts have expressly left to the east of the boundary line). «Those parts of the *crest of a mountain range* which rise higher than other parts near them, especially if somewhat precipitous.»

§ 52.—WEBSTER defines «peak» as «the top of a hill or mountain ending in a point, as the peak of Teneriffe.»

The Standard Dictionary (latest edition) gives as equivalents of *summit:* «acme, apex, cap, climax, height, pinnacle, top, vertex, *peak*»;—and the *Century Dictionary* adds that a pinnacle is «a peak or short point»,—«the very topmost point of a mountain», viz: «the highest pinnacle of a rock».

Peaks only determine isolated points, while the *cumbres* or crests of the Cordillera are lines which indicate a given trend; they are not more or less wide, round or oval spaces: they are the edges, the culminating lines that determine the axial direction of a mountain chain; and it is not right to translate said lines of direction, trend or bearing by the words «peak» nor «summit», as these do not imply the idea of lineal extensions.

The words «summit lines» might be more acceptable, as the *Standard Dictionary* says they are « a line along the crests of elevations.»

§ 53.—The word «cumbre» shall be now studied in the Spanish dictionaries and authors.

Diccionario Etimológico de Roque y Barcia: « La cima ó *parte superior de los montes* ».

Diccionario de Domínguez: « Cima, *parte más alta* de las montañas, vértice, punta, altura, (cumbrera, ant. v. cumbre)».

Diccionario de la Real Academia Española: « La cima ó parte superior de un monte »; and it adds that « cima » is « lo más alto de los montes ».

According to the foregoing dictionaries we can say that *cima* is summit, and that *cumbre* is the *highest part* of a mountain or mountain-range. This is clearly confirmed by the following author:

§ 54.—Juan Vilanova y Piera, *Manual de Geología Aplicada* (page 20): « La cima de las cordilleras, esa *linea* que, en la mayoría de los casos *(that line which* in the majority *of cases),* es la verdadera divisoria de las aguas, tan pronto se eleva en unos puntos, perdiéndose en las regiones de la atmósfera, dando lugar á las *altas cumbres (forming the high crests),* «como baja y se deprime, constituyendo en otros el paso ó comunicación entre las dos *vertientes* y sus valles *(constituting in others the pass or communication between the two slopes and their valleys),* formando lo que se llaman *gargantas, puertos, desfiladeros,* etc ». (Here we have an instance of what Spanish writers understand by *vertientes,* i. e.: «slopes», and certainly not springs or sources).

The same Vilanova y Piera, in his *Compendio de Geología,* page 13, states that:

« *Cima y cumbre.*—Cima es la parte superior por donde ter-
« minan los montes; *reservándose más particularmente el nombre*
« *de cumbre á la parte por donde rematan las cordilleras* ó ca-
« denas de montes: en Galicia la llaman cimbrio ». *(Summit*

is the higher part by which mountains are terminated; the name of cumbre being more particularly reserved for the part by which the CORDILLERAS *or mountain ranges terminate).*

The above suffices to show that *cumbre* is perfectly well translated by «crest», as in Spanish said word is the one specially employed when wishing to indicate the comb or the line of general heights of the Andes, i. e.: of a Cordillera.

§ 55.—ANTONIO SANCHEZ DE BUSTAMANTE, in his *Nuevo Tratado de Geografía Universal*, page 79, says: «Cuando las « montañas que contiene una cordillera son muy altas y extre- « madamente escarpadas y peñascosas, se llaman *sierras* á se- « mejanza de las del carpintero, por presentar EN SU CRESTA « altos y bajos á manera de dientes.»

In the foregoing paragraph, the synonymy between cumbre and crest is obvious.

The Spanish comparison of the crest of a mountain range with the teeth of a saw is also in favour with French authors, such as *Lapparent*, who will be quoted further on.

§ 56.—It were well to add that in the above definition we agree with Chilian writers, however we may differ in other matters. The following quotation proves this statement:

ALEJANDRO BERTRAND, chief of the technical personnel of the Chilian commissions, in his *Estudio técnico sobre la demarcación de límites entre Chile y la República Argentina*, page 5, writes as follows:

«Las fronteras de las naciones son de dos grandes categorias, naturales y convencionales. Entre las primeras figuran las costas ó riveras de mares, los lagos y los rios, el curso de éstos, *las cumbres de cerranias*. Los deslindes de esta clase, por su naturaleza misma, se prestan á ser definidos por una sola expresión ó frase: *la cresta de los Pirineos*, la ribera del Mediterraneo, etc. Basta señalar los dos extremos de una frontera natural para que quede definida en toda su extensión. Esto implica la condición de *continuidad*, característica de estas líneas.» «The frontiers of nations belong to two great categories:

natural and conventional. Among the former figure the coasts or shores of seas, the lakes and the rivers, the course of the latter, the *cumbres* of mountain regions. Delimitations of this kind, on account of their very nature, may be defined by a single expression or phrase, namely:—*the crest of the Pyrenees*, the shore of the Mediterraneau, etc. It suffices to indicate the two extreme points of a natural frontier, for it to be defined in all its extent. This implies the condition of *continuity* characteristic of these *lines.*»

This is exactly what happens in art. 1 of the treaty of 1881 when it states that the boundary between Argentina and Chili is from north to south the Cordillera of the Andes; and that is why *cumbres* should be translated by crests.

§ 57.—The same author (*op. cit.* p. 119) adds: «Dejemos es-« tablecido también que las palabras *cresta* ó *arista* de una cade-« na de montañas, cuando se le quiere dar un significado con-« creto y topográfico, no sé refieren *á la cresta más aparente ó* « *al conjunto de las cumbres,* sino á la divisoria misma de las « aguas, según las definiciones de los citados textos, y las ex-« plicaciones más autorizadas todavía del gran geógrafo Reclus.»

When the treaty speaks of the highest crests of the Andes, it certainly does not refer to the low divides, in valleys of the Córdillera, and certainly not to still lower waterpartings in the Patagonian table lands (see note 6.)

§ 58.—The word «crest» is the one which best renders *cumbre* into English.

The *Century Dictionary* defines the word thus: «The highest part or summit of a hill or mountain range, the *top line of a slope.*»—According to the same dictionary, «crest» is a synonym of «comb»:—«the crest of a hill»;—because crests appear indented, indentated, castellated, jagged and battered, and also wavering and undulating, according to Darwin, Hayden and other authors.—All this tallies with: «la cima ó cumbre de las montañas elevadas, formada de peñascos con la figura de cres-

tas de gallo»,—according to the expressions of the *Dictionary of the Royal Spanish Academy.* (Ed. 1884.)

§ 58 *bis.* The very same idea is expressed with great clearness and precision by Ch. Vogel when he says:—*La ligne de faîte caractéristique de la direction principale d'une chaîne ou série de montagnes, s'appele crête,—à moins que le faîte s'étendant en largeur, ne forme un plateau supérieur et dominant.* «(Le monde terrestre, p. 219. Ed. 1877).—«The summit-line which charac» terizes the main bearing of a chain or series of mountains, is called *crest*, unless the summit spreading out in breadth forms an upper and commanding plateau.»

§ 59.—LAPPARENT, the celebrated French geologist, in his *Traité de Géologie* speaks of la crête culminante d'une haute chaîne affectant le profil d'une crémaillère inclinée (page 74); and in page 70 he says «De plus, quand il y a plusieurs chaînes parallèles entre elles, elles forment ordinairement une série d'échelons, s'élevant progressivement jusqu' à la *crête* principale, située à l'extremité de la série, de telle sorte que l'ensemble offre à peu près le profil d'une crémaillère ou une lame de scie inclinée»;—i. e. the above mentioned comparison of the edge of a saw-blade.

§ 60.—RECLUS (ELISÉE), in his *Nouvelle Geógraphie Universelle* (T. XVIII, page 693) says: «Le Chili primitif, avant ses récentes annexions de provinces péruviennes et boliviennes, est partout limité *par la crête des Andes,* si voisines des rivages du Pacifique, et vers la pointe amincie du continent, entre les archipels côtiers et les plaines de Patagonie, il se trouve même réduit à quelques escarpements de monts inhabités»;—and in page 720 he adds: À l'est une cordillère parallèle à celle de *la crête de partage,* mais de 1500 mètres plus basse, se profile du Nord au Sud. À la base méridionale du cône, le col ou *paso* de Maipo (3473 mètres) traverse la frontière par un seuil à peine perceptible, tandis que plus au sud une brèche plus haute (4110 mètres), dite Atravesio de la Leña par Güssfeldt, forme *une étroite crête* aux pentes rapides.»

§ 61.—DANA, in his *Manual of Geology,* p. 16, informs us that «the form of a ridge depends on its slopes, the *outline of the crest,* and the course or arrangement of the consecutive parts of the ridge; that of a chain, on all these points and in addition the order or arrangement of the ridges in the chain.»

In page 26 he tells us that «The Kuen Luen mountains to the north of the Himalayas, make *another crest to the great chain* with Thibet between the two.»

§ 62.—«Peak rises behind peak», says GEIKIE, «*crest above crest,* with infinite variety of outline, and with a wild grandeur which often suggests the tossing and foaming breakers of a stormy ocean.»—(*Elementary lessons in Physical Geography* p. 176.)

§ 63.—MILL tells us: «The Andes.—The *main axis* of South America lies close to the west coast *along the crest of the Andes,* which forms the longest mountain system, unbroken by passes of low elevation, in the world.—The short slope to the Pacific varies from 30 to 150 miles in breadth; the long slope to the Atlantic is in parts 3000 miles wide.»—(*The Realm of Nature* p. 278.)

§ 64.—In HAYDEN, we find such phrases as: «The higher crest of the range»,—«the main crest»,—«the upper crest»,—the crest of the lofty massive mountain»,—«the crest of the watershed» —«the axial crest.» etc. *United States Geological and Geographical Survey,*—Idaho and Wyoming, 1877,—p. 67, 360, 397, 402, 401, 418/19, 475).

§ 65.—TREATIES—In the convention between H. B. M. and the Transvaal Burghers, signed on the 3d of August 1881 (see *State Papers,* vol. 72, p. 901/2) we find the word crest used as follows: «thence to a point on the *slope* near the *crest* of Mantanjein, which is the name given to the south eastern portion of the Mahamba hills,».... thence along the *crest* of the range of hills known as the Makongiva, which runs north east and south west to Kamhuibana peak.»

§ 66.—The boundary treaties between France and Spain clearly show that, when speaking of cordilleras, *cumbres* should be translated by «crests», and that *cumbres* and *crests* are synonymous.

In the *treaty of the 2d of December 1856,* Art. 1 says: «la divisoria será la *línea de crestas* determinada por las cúspides de Ochogorria, Mulidoya», etc: «the boundary shall be the *line of crests* determined» etc.

Treaty of 14th April 1862: «Art. 1.—«La línea seguirá POR LA CRESTA PRINCIPAL *del Pirineo:* the line shall follow along the *principal crests* of the Pyrenees»,.... thereby showing that in said mountains there is more than one crest, as is the case in the main range of the Andes.

Art. 4 of said treaty reads thus:—«*Proseguirá la línea internacional* POR LAS CRESTAS DE LA CORDILLERA PRINCIPAL del Pirineo»:—«the international line shall continue along *the crests*» (plural) *of the principal cordillera of the Pyrenees.*»

Art. 7 is still move conclusive, as it says that the boundary line shall strike the main range of the Pyrenees, along the crests of which shall run the frontier line, etc.,—«LA CADENA PRINCIPAL DEL PIRINEO POR CUYAS CUMBRES correrá hasta la frontera del valle de Andorra.»

The signatories of the foregoing treaties agree completely with the Spanish dictionaries and authors above quoted: no doubt can therefore be harboured as to the correct rendering of *las cumbres más elevadas* by «the most elevated crests», a wording which gives the true and practical meaning of the treaty, and not by «summit», which means *cima* in Spanish and is no doubt a rather ambiguous word.

Note n. 5.

THAT MAY DIVIDE (page 3)

§ 67.—The English version of the boundary treaty of 1881 (v. «State Papers», vol 72, p. 1104), translates as follows:

—«La línea fronteriza correrá en esa extensión por las cumbres
«*The frontier line shall follow*.....*the crest*
más elevadas de dichas cordilleras que dividan las aguas», etc.
..... *of the cordillera which divides the waters*», etc.

This is not a faithful translation: it omits the words «in that extent»; it says *crest* instead of *crests* in the plural; it leaves out the words «most elevated»; it says *the* instead of *said*, and it puts the verb *dividan* in the indicative (singular), when it is in the subjunctive mood (plural.)

In saying the cordillera (singular), instead of said cordillera*s* (plural), the translation is however right, as said cordillera «cannot but refer to «Cordillera de los Andes» mentioned in the first lines of the same article.—This error has been saved in Art. 1 of the Protocol of 1893.—(v. note N°. 19).

According to the treaty, the boundary line is not «to follow the crest of the Cordillera.»—It is to run along «the *most elevated crests* of the Cordillera that *may divide the waters*».—The experts are not to follow the very summit line of the Cordillera: they are to select out of the most elevated crests of the principal chain of the Andes, (*«del encadenamiento principal de los Andes»*,—Art. 2, Protocol 1893) only such «*as may divide the waters*»,—and that is what the experts have done up to the Bio Bio divide, as can be seen in the boundary line which they have traced in both their maps.—(v. «Record of the proccedings» of the Experts dated 3° September 1898).

Note n. 6.

SLOPES (page 3)

§ 68.—In the translation of the word *vertientes* two mistakes have been committed which unfortunatelly figure for many years back in the *State Papers* of England and in the *Foreign Relations* of the U. S.

The *State Papers* translate thus:

« The frontier line shall follow the *crest* of the Cordillera, which divides the waters, and *will pass between the sources thereof* on either side. »

The *Foreign Relations* translate the very same lines in the following manner:

« The frontier line is to run in that direction over such of the *highest peaks* of said Cordillera as may divide the waters, and is to *cross the springs that start from both sides.* »

(Regarding the « starting » of springs from any point, see note 7).

It is evident that the two above translations materially alter the text of the treaty, the boundary line of which is not to run along the crest of the cordillera or over its highest peaks, nor is it to pass between the springs or sources of any waters. What the treaty says is this:

« La línea fronteriza correrá en esa extensión por las cumbres más elevadas de dicha Cordillera que dividan las aguas y pasará por entre las *vertientes* que se desprenden á uno y otro lado. »

The frontier line shall run in that extent along the most elevated crests of said Cordillera that may divide the waters and shall pass between the slopes which descend one side and the other.

§ 69.—The translation given by the Chilian Boundary Office shows a still wider departure from the original text. It runs thus: « The boundary line shall run through that part over « the highest summits of the said cordilleras which divide the « waters, and shall pass between the sources flowing down to « either side. » This would mean that the divisional line is not to be developed along the highest crests of the main range of the Andes that may divide the waters, nor pass between the declivities on both sides; but that the experts are to select the highest summits of that range of the cordilleras which separates the *continental* waters, and trace the line between the sources of said waters (v. « *The Boundary Question between*

Chili and the Argentine Republic.—Memorandum on certain capital points, drawn at the Chilian Boundary Office»—Valparaiso, 1898, pages 10 and 11, &c.)

The latter translation, and the two first above quoted, give the treaty of 1881 a *hydrographic* sense which it has not, and suppresses the *orographic* meaning which stands out in the very first line of its article 1: « The boundary between the Argentine Republic and Chili, from north to south as far as parallel of latitude 52° S. is the Cordillera of the Andes »; and which is emphasized in art. 2 of the protocol of 1893.

§ 70.—It should be observed that some translators most probably have been led into error by the current English-Spanish and Spanish-Engltsh dictionaries (v. §§ 2, 6) which most likely copy each other and have thereby continued perpetuating their mistakes. The lexicons of Lopes and Bensley, and of Velasquez de la Cadena, for instance, say: « *Vertiente* (substantive) — 1, « waterfall, cascade; — 2, spring, source. (present participle) — « flowing; » and yet, in the very same works, under none of those five words is the word *vertiente* to be found as their equivalent. This alone indicates that an error has crept into the dictionaries and remained there.

We therefore feel it our duty to draw attention to this point; and on the other hand to found with all amplitude the translation of *vertiente* by *slope* or *declivity* as justified by all scientific works, by the dictionaries of the English and Spanish languages, which are confirmed by the French, German and Italian lexicons, and likewise by the Chilian writers themselves.

To be more explicit, we may add that no author uses the words «sources» and «springs» as synonyms of «slopes» and «declivities», and that the meaning we have given them is the true one (v. §§ 4, 7).

§ 71.—The word *vertiente* has been employed in various Chilian papers on the boundary question, giving same a hydrographic or hydrological meaning. Admitting that they act *bona fide,* it certainly appears that they have not taken the trouble to study

the matter, as the waters which flow down (*vertientes* or) slopes are not the slopes themselves.

§ 72.—The following authorities confirm the above statement:

R. J. DOMINGUEZ, *Diccionario Nacional de la Lengua Española*—« Vertiente, *participio* de verter; que vierte: como aguas « vertientes. *Sustantivo: el vertiente ó sitio por donde se desliza,* « *corre ó puede correr el agua.* »

REAL ACADEMIA ESPAÑOLA, *Diccionario de la Lengua Castellana*—« Vertiente: p. a. de verter, que vierte; aguas vertientes: amb.» (because in Spanish we can say *el* or *la* vertiente, indifferently employing the femenine or the masculine gender). *Declive ó sitio por donde corre ó puede correr el agua.*

It has been groundlessly urged that *aguas vertientes* means «springs» or «sources»,—this is a mere gratuitous assertion, as springs and sources are *manantiales* and *fuentes* in Spanish; and both the Dictionary of the Royal Spanish Academy and the English-Spanish lexicons say that those words mean running or flowing waters. So the Spanish Academy, under the words *aguas vertientes* says: *las que bajan de los montes ó sierras;* i. e. such waters as descend from the mountains or their ranges, which does not mean springs and sources but the outflowings of same and all kinds of mountain waters, such as filtrations from lakes, ice streams from the glaciers, thawings of the snow, torrents, thermal water, rain water, &c.

The treaty employs *vertientes,* not as a participle of the verb *verter,* but as a substantive, i. e. as the synonym of the declivities or flanks of the Andes; and this is obvious, because it were impossible that the waters which flow down the sides of a mountain, or which in other cases skirt the base of a range, &c., could determine the line of the most elevated crests (v. §§ 4, 7).

§ 73.—In the treaty between Spain and France, 14th April 1862, we read in art. 10 that « the mountain of Astanés,... is situated *(en la vertiente septentrional del Pirineo)* on the northern slope of the Pyrenees; and art. 11 refers to the *(vertiente septentrio-*

nal de la montaña de Aspe) northern slope of the mountain of Aspe. »

The scientists who write in Spanish tell us that « *vertiente ó flanco* de una montaña » are synonyms, and in this sense LORENZO GALLEGO CARRANZA, (*Curso de Topografía*, p. 20), employs the word in the whole chapter.

§ 74.—VILANOVA Y PIERA (*Manual de Geología Aplicada*, p. 19) says:

« Los flancos ó partes laterales de las cordilleras reciben el nombre de *vertientes*, por terminar en el punto donde se separan las aguas (*divortia aquarum* de los antiguos).

« En tesis general puede decirse que nunca tienen las dos vertientes de una cordillera la misma inclinación. Esto se comprende perfectamente atendida la disposición particular de los materiales que componen las montañas; pues formadas, por lo común, de capas, la pendiente más rápida será aquella en que su inclinación lo sea también, ó en que, interrumpida la continuidad de las capas, éstas se presenten como cortadas y formando escarpes. En los ramales y estribos, la pendiente, por regla general, es más rápida en el lado que mira hacia el eje de la cordillera que en el opuesto.

« En las montañas formadas de capas de tierra ó piedra, la inclinación es menor en la vertiente hacia la cual cruzan ó se pierden aquellas.

« Algunos geógrafos experimentados, llevando á la práctica estos datos, establecen, como principio general, que la vertiente cuya inclinación es de 8°, permite la subida á los carruajes; hasta 15° es fácil el tránsito de caballerías de carga; la que ofrece 30° y 35°, requiere ya el auxilio de escaleras; y por último á los 45° se hace completamente inaccesible. En los Pirineos, por término medio, la inclinación de las vertientes septentrionales es de 3° á 4°, así como la de las meridionales de los Alpes es de 3° y 3/4.

« No es esencial en una cordillera la existencia de dos vertientes; á menudo se observa que las que terminan por una

meseta, si esta es muy grande, lejos de ofrecerla en aquella dirección, da, por el contrario, origen á otras cordilleras ó montañas.

« El centro de nuestra Península nos ofrece magníficos ejemplos de todo esto.

« Las montañas no siempre se hallan ordenadas á un eje, costituyendo los accidentes que acabamos de examinar en las cordilleras; otras se presentan también como agrupadas alrededor de un punto, que suele ser la cima ó cumbre, desde el cual se extienden y bifurcan, á la manera de radios, los estribos ó machones, constituyendo lo que se llaman *grupos de montañas*, cuya disposición y circunstancias particulares deben ser distintas de las de las cordilleras. También los grupos ofrecen mesetas en la cumbre. »

§ 74 *bis*.—To the preceding definitions may be added the following, which belongs to a highly respected south-american author:

« El espacio de terreno que desciende desde las cimas de las montañas hasta las llanuras vecinas, se llama *vertiente* y vulgarmente *ladera* ó *falda* ». The tract of ground which descends from the heights of the mountains to the neighbouring plains, is called a slope (vertiente) (v. MATEO and MARIANO F. PAZ SOLDAN. *Geografía matemática, física y política,* II, p. 159, ed. 1863).

§ 75.—Engineer FRANCISCO J. SAN ROMAN (*Estudios i Datos Prácticos sobre las Cuestiones Internacionales de Límites entre Chile, Bolivia i República Argentina*), in page 10 seems to give the word *cumbres* the meaning of «summits», when he says:

«Determinar cuáles cumbres se tomarían por las más altas entre todas las que lo son ó podrían aspirar á serlo, sería interminable y sin solución»;—but this is not what the treaties provide, as has beon shown in note N°. 4.

Mr. San Roman adds that, having once fixed which are those highest cumbres:—«la tarea topográfica de fijar en el terreno profundamente accidentado de las vertientes andinas» (of the

Andine slopes), «la traza de las líneas que unirían las más altas cumbres designadas, no tendrían fin durante todo el siglo venidero, produciéndose dificultades á cada paso y en cada punto, con soluciones inaceptables para uno ú otro de ambos colindantes.

And yet the very same writer, in the very same page and in the very next lines, continues thus:—«Al contrario la designación del dorso de una montaña, de su línea anticlinal ó de división de las aguas, como dice el tratado internacional, se determina por sí sola, etc.» *(on the contrary, the designation of the back of a mountain, of its anticlinal line or watershed, as the international treaty says, is determined by itself.)*

This gentleman employs indifferenty the words *faldas* and *vertientes,* which are synonyms of «flanks» and «slopes».— For instance, in page 17, he speaks of Argentine and Chilian maps that derive the waters of the Bermejo from *las faldas del Azufre ó volcan Copiapó;* and in page 18 he mentions *la falda oriental de El Azufre.*

In page 62, referring to the signatories of the treaty of 1881, he makes the following straightforward declaration: «La definición que establece es tan neta como el curso de los Andes á que se refiere, con su prolongación contínua en extensión y sus planos matemáticos en las *opuestas vertientes que caen* á un lado y otro *de la línea de mas altas cumbres* que dividen las aguas.» (The definition which they establish is as clear as the trend of the Andes to which it refers, with its continued prolongation in extent and its mathematical planes on the opposite declivities which fall on one side and the other of the line of most elevated crests which divide the waters).

§ 76.—The chief of the technical personnel of the Chilian commisions for the demarcation of boundaries, MR. ALEXANDER BERTRAND, *(Estudio Técnico para la Demarcación de Límites entre Chile y la República Argentina,* Santiago de Chile 1895) says, in page 47: «El término Vertientes tiene dos acepciones; la mas ámplia y correcta, ó *topográfica,* según la cual es *el de-*

clive ó sitio por donde se desliza, corre ó puede correr el agua (Diccionario), y la mas vulgar y restrinjida ó *hidrolójica* que se aplica á las fuentes de los manantiales mismos ó arroyos.»

Let it be noted that Mr. Bertrand gives exactly the same definition as the Spanish dictionaries; but regarding his own particular acception of the word, we find no authorities in its favour; simply because no author teaches that the substantive *vertientes* means anything but inclined surfaces, slopes, declivities or flanks of a mountain. On this point, both the English and Spanish languages and writers agree.

Mr. Bertrand, himself, in p. 48, makes the following statement: «Sin embargo, tratándose de la aplicación de reglas *topográficas,* hay que atenerse únicamente á las definiciones *topográficas;* según ellas, como hemos visto, las *vertientes* de una isla ó continente son dos grandes planos (ó superficies) de pendiente contraria cuya intersección constituye la divisoria de aguas de primer órden de la isla ó continente (Suarez Inclan).»

Mr. Bertrand's definition of «*the two great planes or surfaces of counter declivities, which in their intersection constitute the principal watershed of an island or continent*», agrees with what *Clairac y Saenz* (Diccionario de Arquitectura é Ingenieria) says under the word *divisoria:*—«la línea de intersección de las dos vertientes de una montaña; y en general la que divide todo terreno, atendiendo al sentido en que corran las aguas fluviales.»

§ 77.—Mr. Barros Arana, the Chilian expert, does not limit his definition to islands and continents. He gives the true and general meaning of the word *vertientes* when (in his «*Elementos de Geografia Física*», page 46), he says:—«Los costados de las montañas por donde bajan sus aguas, se llaman *vertientes*»; —and, as an example given by the same author, we have one in page 48. The following:—«El pico de Aconcagua situado en la vertiente oriental de los Andes de Chile»:—*The peak of Aconcagua lying on the eastern slope of the Chilian Andes.*»— That peak is however on the Argentine Andean slope.

To confirm the exactness of his definitions, Mr. Barros Arana

states in his note to page 47 *(op. cit)*, that they are all taken from the «Geografía Uuiversal Antigua y Moderna» by *D. Antonio Sanchez de Bustamante* (Lib. 2, cap. III).—In fact, in page 78 of said work, the above quoted definition is to be found couched in identical terms.

§ 78.—*Don Cárlos Morla Vicuña*, Envoy Extraordinary and Plenipotentiary for Chili in the United States, afterwards in the United Kingdom, and lately Minister of Foreign Affairs of said Republic, agrees with the idea of Messrs. San Roman, Bertrand and Barros Arana concerning *vertientes*, and he therefore honestly translates the word by «slopes.»

«*The Morning Post*», London, Number of the 29th of July 1898, gives a long report of said Minister's views on the boundary question between the Argentine Republic and Chili.—Mr. Morla Vicuña says,—and his words are put between inverted commas;—«The actual wording of the treaties is: The limit between Chili and Argentina from north to south and down to the 52 degree of south latitude is the Cordillera of the Andes.—The frontier line shall run along the highest summits of the said Cordillera which divides the waters, and shall be traced *between the* SLOPES that descend east and west.»

Those slopes are the very *vertientes que se desprenden á un lado y otro,* of Art. 1 of the treaty of 1881.

§ 79.—However Mr. Barros Arana, losing sight of what his subordinate, Mr. A. Bertrand, has written, forgetting his knowledge of the Spanish language and his own definitions as a professor of Physical Geography, pretends, in recent publications, to give to the word *vertientes* the meaning of «springs» or «sources»; and he is followed in this novel idea by the Chilian Boundary Office, which translates *las vertientes que se desprenden á un lado y otro* by «the sources flowing down to either side.» (v. «The Boundary Question between Chili and the Argentine Republic», Valparaiso, 1898, page 11).—The novelty of the «continental» divide must be at the bottom of all this.

It is not the province of the translator to discuss the good

or bad faith of such proceedings; but it certainly is his duty to point out the facts.

§ 80.—Mr. Barros Arana nevertheless most distinctly proves that the word *vertiente* was never taken for «springs» or «sources» by either the Chilian or the Argentine negotiators of the Treaty of 1881.—In page 13 of his «*Cuestión de Límites entre Chile y la República Argentina,* he informs the reader that the first proposed redaction of Art. 1 of said treaty was as follows»: La República de Chile está dividida de la República Argentina por la Cordillera de los Andes, corriendo la línea divisoria por sobre los puntos mas encumbrados de ella; *pasando por entre los manantiales de las vertientes que se desprenden á un lado y al otro.*» —This was the Barros-Elizalde treaty, which was not approved.

Now, the phrase *manantiales de las vertientes* means «the sources of the slopes»; but the word *manantiales* was expressly suppressed in the drafting of the treaty of 1881.—Yet the Chilian Boundary Office, in the pamphlet above quoted, (page 11) translates as if no such suppression had been made; and surely the slopes have not been magically turned into «sources» or «springs» for the benefit of any theory.

It appears that the translators of the Chilian Boundary Office are not so successful in the rendering as their employers in the definition of the word *vertientes* (v. n. 1. p. XLVIII.)

§ 81.—The Spanish greographer *Don Martin Ferreiro,* of the Geographical Society of Madrid, in his «Traducción de la Nueva Geografía Universal por Eliseo Reclus», gives a very complete idea of what constitutes slopes *(vertientes),* which he translates from the French *versants* in the following paragraphs (vol. II p. 16/17): «La misma razón que tal encanto presta á la *vertiente Italiana* de las montañas, ha hecho de aquellas alturas una dependencia natural de las Galias, etc.... En *la otra vertiente, mas prolongada y mirando al Norte,* es generalmente mucho menos variado el aspecto.... y los habitantes pueden traspasar fácilmente la cumbre para ganar *las vertientes meridionales....* Fuera del recinto que los montes abarcan, no se habla

la lengua italiana,.... al paso que los elementos francés y germánico están fuertemente representados en la *vertiente interior*....

«Es cierto que en aquella parte de su circuito, Suiza y el Tirol austriaco han sustraído á Italia extensas comarcas, que corresponden á *sus vertientes*;... y es políticamente de Austria la cuenca del Alto Adige... Los dos únicos ríos Alpinos de la *vertiente meridional* cuyas aguas corren casi enteramente en suelo Italiano son el Piave y el Tagliamento».

§ 82.—It suffices to read the preceding translation in order to feel thoroughly convinced that the author is speaking about slopes; because the dictionaries of PAUL GUÉRIN, of LARROUSE, of LITTRÉ and of the ACADÉMIE FRANÇAISE say that *versant* is *la pente d'un des côtés d'une chaîne de montagnes;* and the examples which they give are the following: «*Le versant espagnol des Pyrenées*». «*Les hêtres s'annoncent haut sur le versant jusqu'a plus de 3000 pieds*».

§ 83.—LAPPARENT in his «*Traité de Géologie*», pages 68-70 says as follows:—Cela posé, examinons les conditions dans les quelles se présentent les deux versants des principales chaînes de montagnes... La pente méditerranéenne des Apennins de la Ligurie est double de la pente Lombarde. Les montagnes de l'Istrie et de l'Esclavonie ont leur versant adriatique abrupt, tandis qu'elles s'abaissent en pente plus douce vers la Save. Le Caucase.... sur le versant nord il faut parcourir près de 120 kilomètres pour voir l'altitude s'abaisser à 300 mètres....

Partout donc la même loi se vérifie.—Les deux versants d'une chaîne simple sont inégalement inclinés et le plus abrupt est toujours celui qui fait face à la plus grande dépression. En outre le rapport qui prevaut le plus généralement entre les pentes des deux versants est à peu près celui du simple au double....

Une coupe dirigée à travers le Mont Blanc nous révélerait une constitution semblable; là encore les versants tournés vers le sud-est sont sensiblement plus raides que ceux qui regardent le nord-ouest.—La même chose s'observe dans les Alpes Françaises où le massif de Grénoble et celui du Mont Viso présen-

tent un versant sud-est plus incliné que le versant nord-ouest».

The same author in his *Géographie Physique*, gives in page 100, further explanations concerning *versants,* and in page 152, he speaks of the effects of erosion on slopes.

§ 84.—D. KALTBRUNNER in his *Aide Mémoire du Voyayeur*, page 56 says: «*Versants.*—On appelle *versant* d'une montagne la partie inclinée qui s'étend du sommet au pied ou à la base. Il y a presque toujours une différence d'inclinaison entre les deux *versants* d'une même montagne.... Les Andes out leur *versant* abrupte tourné vers l'Ouest; le Jura a le sien du coté de l'Est. La pente ou degrè d'inclinaison des *versants* de montagne est beaucoup moindre qu'on ne le croit généralement».

§ 85.—In German, *vertientes* are called «Abhänge» and «Gehänge» which is the word most generally used.

German authors define the word *Abhang* as the *Abfall eines Gebirges* i. e. the declivity of a mountain—(v. §§ 4-5).

§ 86.—In Italian, the word *versante* is defined as follows: «Declivio, pendio di un monte é di una catena di monti.—*Il versante* settentrionale delle Alpi». («E una di quelle voci inutili que gli scienzati hanno introdotto, non per arrichire, ma per impoverire la lingua») TOMASSO BELLINI *(Dicciion. della lingua Italiana).*

An identical definition and remark is to be found in the *Vocabolario Italiano della Lingua Parlata*, by RIGATINI E TANFANI.

§ 87.—In English the word *vertientes* is best rendered by «declivities» or «slopes». The latter has been adopted, because it is the one invariably employed in scientific books when treating of the Andes.

Declivity: «a slope, sloping down, bend down, decline, down-« ward slope. The portion of a hill or range of mountains lying « on one side or the other of the crest or axis» *(Century Dictio-« nary),* SIR JOHN HERSCHELL employs the word in the following phrase. «The Ural consists, along its western *declivity*, of the older palœozoic rocks».

PRESCOTT, in his *Fernando* and *Isabella* (vol. I, chap. IX)

says:—«They beheld the bright arms and banners of their countrymen gleaming along the *declivities* of the mountain».

TICKNOR, in his *Spanish Literature* offers the following example: «The Pyrenees made then, as they make now, no very « serious difference between the languages spoken on their *oppo-* « *site declivities*». Ticknor's work was translated into Spanish in 1851 by D. Enrique de Vedia and D. Pascual de Gayangos, member of the Royal Academy of History, and in their version the above lines run thus:

«Entonces, como ahora, el Pirineo etc;... pero los dialectos que se hablaban de uno y otro lado y *en sus vertientes* eran casi idénticos» *(v. op. cit.*, Spanish edition,—vol. 1, p. 325).

WEBSTER'S and *The Standard Dictionaries* define *declivity* like the Century Dictionary.

§ 88.—*Slope:* «2. a *declivity* any ground whose surface forms an angle with the plane of the horizon; also an acclivity, as every declivity must be also an acclivity. «The buildings covered the summit and *slope* of a hill».—(Macauley).—(WEBSTER, a *Dictionary of the English language*, 1870).

Slope: a *declivity* or acclivity; any ground whose surface forms an angle with the plane of the horizon». *(Century Dictionary).*

In the preceding sense, JAMES D. DANA speaks of the *slopes of mountains.* «In the Andes, he says, the eastern *slope* is about 60 feet in a mile, and the western 100 to 150 feet,.... the *slope* is much more rapid than in the Rocky Mountains»; and throughout his work he continually repeats the expression with the same meaning, for instance, when he mentions «the upper «*slopes* of Mount Etna» (v. «Manual of Geology» p. 16, 17, 698-9).

In the same manner is the word employed by HAYDEN *(op. cit.* p. 65 and others).

§ 89.—MILL: «The simplest conceivable continent would consist of two land *slopes* meeting like the roof of a house along a central line or axis»....

§ 90.—The geodesist FROME says: «The slopes most necessary

to note on a military sketch are those which relate of the facilities of ascent for artillery, cavalry and infantry.—According to the *Aide Mémoire,* a slope of about:

60° or 4 to 7 is inaccessible for infantry.

45° or 1 to 1 difficult.

30° about 7 to 4, inaccessible for cavalry.

15° about 4 to 1, inaccessible for wheeled carriages.

5° about 12 to 1, easy for carriages.

(«*Surveyings*» p. 155).

The above is, in a way, a reminder of what Spanish and Chilian authors, previously quoted, say about *vertientes.*—(v. §§ 63-74).

§ 91.—GEIKIE: says «The position of the axis determines the general slope on either side. When it runs along the centre of a continent, the average angle of slope on either side will be the same. When it lies close to one side, the angle must be higher on that side than on the other. Each continent or country, with an axis lying far from the true centre of the region, has therefore a short and steep slope on one side and a long and gentle slope on the other. South America presents the most remarkable example of this feature. The axis, with an elevation of perhaps 8000 or 10,000 feet runs down the line of the Andes at a distance of only from 50 to 100 miles from the Pacific but 2000 miles from the Atlantic Ocean.»—(*Lessons on Physical Geography* p. 171).

§ 92.—On this matter may also be consulted: HUGHES, *Modern Geography* p. 33; DARWIN, *Voyage round the World* p. p. 244/5; 318 etc.; JUKES AND GEIKIE, *Manual of Geology*, p. 471; HUXLEY, *Physiography,* p. 18/19; LYELL, *Geology,* p. 61; LAING, *Human Origins*, p. 219 and 376; TARR, *Physical Geography,* p, 363 etc.

§ 93.—The treaty between Spain and France, 14th April 1862, (arts. 10 and 11,) speaks of the «northern slope of the Pyrenees», —la *vertiente* septentrional del Pirinéo.—(*v.* §§ 4-7 and note 20).

Note n. 7.

WHICH DESCEND (page 3)

§ 94.—The Chilian Boundary Office in the above mentioned pamphlet (note to p. 50) quotes the Argentine Minister, Don Félix Frias, and gives the following translation of some lines taken from the message of the President of Chili:... «the culminating line of the cordillera, between the sources which go down *(descienden)* to the Argentine provinces and those that water *(riegan)* Chilian territory».

The words quoted are to be found in page 6 of Mr. Barros Arana's «*Cuestión de Límites*», and we will give the Spanish text: «la línea culminante de la cordillera entre las vertientes *the culminating line of the cordillera between the slopes that* que descienden á las provincias Argentinas y las que riegan el *descend to the Argentine provinces and those that water* territorio Chileno». (On the «going» of slopes § 96).
the Chilian territory».

If highways bend, and turn a corner, and pass by a house, and go down a declivity, etc.,—why should not slopes «descend», as Mr. Morla Vicuña, (v. § 78), Hayden and other writers say; and why sources should do so, *being stationary*, is more than we can satisfactorily explain. Sources do not move from their natural situation; their outflows or overflows may do so in the shape of rivulets, streams or torrents; but slopes certainly go down, fall or sink (i. e. descend) from the high level of their crests to the lower one of the valleys.—«*Las vertientes derraman sus aguas en un lago ó canal*»».—«the slopes shed their waters into a lake or channel», is a phrase commonly used; and as they shed water, they naturally irrigate the regions into which it flows. The Chilian President's language is easily understood without need of turning slopes into sources, the more so as the intersection of sources never constitutes a culminating or crest line,—even if such intersections took place in nature.

§ 95.—The word employed in the Treaty is, however, not *descienden* but *que se desprenden;* and it has been alleged that the latter verb, which literally means: «that detach themselves», i. e. that depart or separate themselves from one place in order to fall or run into another, *can only be applied to waters.*—This is not true; and the linguistic and scientific authorities are certainly not in favor of the Chilian argument.

«*Desprenderse:*—caer (to fall), venir (to come), descender (to descend), bajar (to go down) algún objeto de lo alto con rapidez ó velocidad»—DOMINGUEZ. *(Diccionario de la Lengua Española).*

«*Desprenderse:*—caer, venir, descender, bajar, algún objeto de lo alto con rapidez ó velocidad»; CÁRLOS OCHOA, *(Novisimo Diccionario de la Lengua Castellana).*

Desorenderse:—«bajar alguna cosa de lo alto con gran rapidez.» ZEROLO, *(Diccionario Enciclopédico de la Lengua Castellana,* 1898, 2ª Ed.)

Desprenderse:—«vale también baxar alguna cosa de lo alto con rapidez.—Lat. *decidi, delabi*». *(Diccionario de la Real Academia Española.* Ed. 1739.)

§ 96.—The Chilian writers themselves appear to know perfectly well the meaning of the word and its employment.

PISSIS, in his «*Geografia Fisica de la República de Chile*», page 9, speaks of «los *cordones* (ridges) que *se desprenden* de la cumbre»; and in page 13 he adds: «de este mismo cerro de Peralta *se desprende* el cordón donde se hallan los cerros del Cinchado y de Agua Amarga».

Mr. Barros Arana, in his *Elementos de Geografia Fisica* (4th edition, Santiago, 1888), describes in page 53 the spot where «*se desprende* una verdadera cadena de montañas con el nombre de Cordillera Real» (a true range of mountains under the name of Cordillera Real); in page 60, he says «al suroeste de esa gran meseta (plateau), y *desprendiéndose* del mismo punto central, se extiende otra»; in page 365, he tells us that «entre ambas cordilleras hay varias cadenas trasversales (transverse ranges) que

se desprenden de los Andes; in page 366, after mentioning the irregularities of the Andine mountain chains and the rapid descent of the Chilian territory, he remarks: «se diria que todo él es formado por un plano inclinado (by an inclined plane) que *se desprende* de las faldas de los Andes PARA IR á sepultarse al océano Pacífico».

Here we have the *whole of Chili,* in the shape of an inclined plane, «*descending* from the slopes of the Andes and *going* to bury themselves in the Pacific Ocean». Everybody knows that there is no actual movement in the inclined plane and that it does not jump into the waves of the sea; and it were ridiculous to criticize forms of speech which are usual and nobody fails to understand. In the same way it is nonsense to criticize any body by referring to (v. § 94) a few lines from a message of a Chilian president where it is said that some slopes of the Andes *descend* to the Argentine provinces and others *water* Chilian territory. In another place we find the words *las vertientes que van,*—the slopes that *go,*—and we do not deduce from the word «go» that said slopes must be *sources,* (which do not go at all). No more do we infer that the whole of Chili has been turned into water or into a continued series of sources, because Mr. Barros Arana says that «it *goes* to bury itself in the Pacific Ocean». All this only shows how language is strained in order to make the treaties say what they do not say.

In page 367, the same author adds that, «la última cadena (chain) que interrumpe el valle central es la de Chacabuco, que *desprendiéndose* de la gran Cordillera desde las alturas del Juncal»; and in page 375, he informs us that «algunos cordones de serranias (ridges of mountain regions) que *se desprenden* de la cadena de la costa, se avanzan hácia el mar»... &c., &c., &.

Let it be borne in mind that Mr. Barros Arana's book has been the university text in many South American States; and, on the other hand, no possible quibbling can turn ridges, chains, plateaux, transverse ranges, inclined planes, and mountain regions, cordilleras reales and a whole country into sources.

§ 97.—We cannot doubt that the Spanish Government knows its own language. We find in the treaty between France and Spain (14th April 1862), article 4, the following... «Escaleta, punto de donde *se desprende* el grande estribo que *vierte* sus aguas por una parte al valle de Aran, y por otra al de Luchon». «Escaleta a point from which descends the great spur which sheds its waters on one side into the valley of Aran, and on the other into that of Luchon».

§ 98.—In English, the verb *desprenderse* may be translated by «to fall or to descend»; the latter has been adopted because it is the one generally employed by the authors. DARWIN *(op. cit.* p. 230-234*)* speaks of «several glaciers that descended in a winding course» and also «streams of ice descending to the sea coast»; and HAYDEN *(op. cit.* p. 331*)* gives us the following examples: «the slope descending to Lincoln Valley; (p. 354) «the South end of the crest descends sharply to the broken continuation of the ridge»; (p. 357). «A well beaten highway.... thence descends the west side of Willow Creek»; (p. 364)» from this first sandstone crest, the way descends, passing etc.»; (p. 441). «The Western side of the range descends much more gradually»; (p. 488) «the opposite slopes descending to Gros Venire River» etc., etc.

In view of all the preceding, it can be confidently averred that our translation is correct; and so is Mr. Morla Vicuña's (v § 78).

Note n. 8.

BIFURCATION (page 3)

§ 99.—Instead of this word the «State Papers» say «forking», which implies a branching out in more than two divisions; besides the word bifurcation exists in the English language, and is sometimes a synonym of the former.

Note n. 9.

WATERSHED (page 3)

§ 100.—Watershed is the genuine translation for «*línea divisoria de las aguas*».—Said Spanish words might be literally and

grammatically translated by «the dividing line of the waters» or «the divisional line of the waters», but it can hardly be said that such phrases belong to the language current in works of Natural Sciences or in diplotmatic documents, such as boundary treaties, as will be shown hereafter.

The Chilian boundary office employs in its translation the word «water-divide». This sounds English, but it is not quite (§ 17 p. XVII) the correct expression,

§ 101.—In the United States, the word «*divide*», by itself, is in common use, but much less frequently heard in England, in the sense of: «a watershed, a height of land which separates one drainage basin or area of catchment from another; often, but not always, a ridge or conspicious elevation. That evening we started over the *low divide* to sun Bay, etc. (A. N. GREELY *Arctic Service,* p. 261). In looking east from the summit of the *Great Continental Divide* at this point, we saw in the distance a vast plain» etc., (HARPER'S MAG. L. XXVI, 401). v. *Century Dictionary*, word «*divide*».

§ 102. «WATERSHED.—The ridge of a river basin, the line separating the waters flowing into two different rivers or river basins. Thus the crest of the Sierra Nevada of California forms the watershed between the rivers flowing into the Pacific and those which lose themselves in the Great Basin. Sometimes called the *water-parting,* and in the United States more frequently and popularly the *divide.*

«Thus the Continental Divide is the line which marks the separation of the waters flowing into the Pacific from those finding their way to the Gulf of Mexico.

«Midnight, the outpost of advancing day! The *Watershed* of Time from which the streams of Yesterday and To Morrow take their way!» *(Longellow. The two rivers).* I.—«The summit of pass is called the divide or *watershed.* In this last word the shed has not the present meaning but an obsolescent one of «part» or «divide» (ger. scheiden). Skeat says: «the old sense «to

part» is nearly obsolete, except in *watershed*, the ridge which parts river systems».

« The *watershed* of any river basin limits its « area of catchment », as the hydraulic engineers call it.—J. D. Whitney, Names and Places, p. 141. »—*(Century Dictionary).*

In the same dictionary, under the word *river* we read that « the area drained by any river is called its *basin,* but this term is not generally used except with reference to a river of considerable size, and then includes the main river and all its affluents. The edge of a river basin is the watershed, in the U. States frequently called the *divide*, and this may be a mountain range or an entirely inconspicuous elevation of the surface. Thus for a part of the distance the divide between the Mississipi basin and that of the Great Lakes is quite imperceptible topographically. »

§ 103.—Mr. Barros Arana, in his *Geografía Física,* page 128, says: « Cada río tiene su región hidrográfica, cuenca ú hoya, es decir, toda la parte del país cuyas aguas lo abastecen: la de un río caudaloso que llega hasta el mar, se llama principal, la de un río mediano, secundaria, y la de otro más pequeño, terciaria: los límites que separan estas regiones ó comarcas fluviales llevan el nombre de *línea divisoria de las aguas.* »

The above definition only covers the area of catchment or drainage basin of large and small rivers; but not the continental water parting, which in the United States is called *the great divide,* or *continental* or the edge of the drainage area of a sea, i. e.: a marine basin (v. § 16[d], p. XIX).

« Se puede decir,—continues said author,—que el conjunto de las pendientes (declivities) y de los valles de donde nacen los manantiales (springs) y los arroyos que van á alimentar un gran río, es lo que se llama su hoya ó región hidrográfica » (the English *river-basin).* « Grupos de montañas, elevaciones más ó menos pronunciadas del terreno, son la línea divisoria de esas hoyas. » (If the line which separates said basins is that of a mountain range, then it is the English *crest watershed;* but if

it is the edge of a mere elevation of the ground, then it may be a valley watershed, which the North Americans classify among the *low divides*). (v. p. XVIII[c]).

Mr. Barros Arana also informs us that: « Hay casos en que la línea divisoria de aguas es simplemente una llanura. » (v. *op. cit.*, pages 139 and 140).

When the division of the waters takes place in a plain—one of the low divides,—then it would be a flat land watershed. (p. XX).

§ 104.—The treaties of 1881 and 1893 evidently refer to the crest watershed, i. e.: that formed by the anticlinal line defined by the most elevated crests that may divide the waters in the main range of the Andes (v. § 16[b] and [c]).

§ 104 *bis*.—The «natural and effective divide of the South-American Continent» (§ 13 p. XIV) is the clue to many difficulties which have arisen simultaneously with its invention. It prompts its defenders to uphold that the word *vertientes* must be translated by «sources» (§ 6 and 7), which would be enough to deprive of all sense the following words of art. 1 of the treaty of 1881: «the frontier line shall run along the most elevated crests.... and shall pass between the slopes which descend one side and the other».

Those lines contain nothing more nor less than the definitions given by physical geographers when they describe a crest watershed or when they say: that the anticlinal line is formed by the intersection of two inclined planes of a mountain (§§ 17[a b]) and 76[c]); that there exists a *divortium aquarum* where a range forms a double slope (§ 40, n. 2); that the culminating line of a mountain crest passes exactly between the two slopes which constitute it or that the meeting place of the highest part of two divergent slopes is a watershed, and it is evident that the line of said meeting place cannot but pass between the two declivities that descend either side (§ 106).

All this is clear enough; but to cause a line to run along the highest crests of a range and also to pass between the «sources»

of the rivers on either side of it is, in a great many cases, an impossibility, an insoluble problem; because the crests that divide the waters are those of the main range of the Cordillera de los Andes (Art. 2, Protocol 1893); and the sources of the rivers may be in the plains as it often happens. (§ 18 and 34).

Such a piece of topographical nonsense, resulting from the translation of *vertientes* by «sources», and not by «slopes», was a stumbling block for all the hydrographic interpreters of the treaties. It accounts however for the invention of the continental divide as a boundary. Following said divide, the crest watershed of the main range might be abandoned and a descent into the valleys and pampas might be made, with a show at least of scientific reasoning, though with a most open and deliberate violation of the treaties, as the latter provide a frontier line which is not the interoceanic divide, when it deviates from the principal chain of the Andes.

§ 105.—Hughes defines a watershed thus: « A watershed or, more correctly, « water-parting », is the ground which divides adjacent streams that flow in opposite directions (v. p. XVII*).

« This generally (but by no means always), consists of a high tract of land, sometimes of a chain of mountains; and it is, in every case, formed by ground which is higher than that through which the streams actually flow, for the natural tendency of water is to run down a sloping ground, from a higher to a lower level. Some rivers, however, rise in ground which is nearly level, and at only a trifling height above the sea; in such cases the watershed may consist of ground which does not exhibit any marked elevation above the adjoining plain. » *(Advanced Class Book of Modern Geography*, page 28).

§ 106.—In Mills *(Realm of Nature*, p. 224), we read: « The series of convergent slopes down which a river system flows —in other words the land which it drains—is called its basin, and is separated by a *watershed* or water-parting from the basins of neighbouring river systems. A watershed is always the meeting-place of the highest part of two divergent slopes.

This is sometimes a mountain range, but often only the crest of a gently rising ground, on which the line of water-parting is difficult to trace. It is usual to name a river system after the river into which the water is collected from the whole basin, the other streams being called tributaries or affluents. The basin of all river systems draining into one ocean are known collectively as the drainage area of that ocean. » (The German *Meergebiet*).

§ 107.—TARR's observations on the subject are very interesting: « Between any two streams streams there is a line, or an area, which divides the waters, sending a part one way and the rest in an opposite direction. These divides or water-partings *are by no means permanent, but are constantly and usually very slowly changing*. The stream that has the most power pushes the divide into the territory of the other and there are various ways in which one stream may have more power than another. One may have a shorter course to the same level, and hence have a greater slope; or one may be cutting through soft rock, while the opponent is working in hard layers; or (as in many islands in the trade-wind belt) the rainfall on one side of the divide may exceed that on the other. *Gradually the divide moves into the area of the stream having the least rainfall, or the least slope, or the hardest rock.*

« A still more important cause *for the changes of divides* is found among tilted rocks.

« If the layers of a series of strata stand in the monoclinal attitude, and if these alternate in hardness, the soft layers weather more rapidly than those which are hard, and which, because of this fact, tend to remain above the general level. In such a case, the highest points do not sink vertically as the ridges wear down; but they move downnard and backward in the directions of the dip of the strata.

« *This is so permanent a condition that it may be stated as a law*, that in rocks of monoclinal attitude, the divides migrates in the direction of the dip. This law of monoclinal shifting

applies also to changes in river courses. In their down-cutting, the *valleys also tend to migrate* in that direction, and this is one of the reasons why streams adjust themselves to soft layers: for once finding them, they tend to remain in them.

« Usually the migration of a divide is an extremely slow process, and in the course of a lifetime one would not notice any change, *but under exceptional circumstances it may become rapid. and in a brief time the divide may change for many miles.* This will happen when a river with a more favorable situation, for some reason gradually pushes its divide back until it taps its opponent.

« Then the stream receives a large accession of drainage area, and carries a part of another system across the old divide. Before the diversion the divide was low and nearly on the same level as the stream about to have its course changed; and then perhaps during some time of flood, the new course was chosen and afterwards maintained.» *(Elementary Physical Geography*, p. 273, &c.

The above remarks apply to some of our cordilleran streams and rivers, and clearly show that the edge of river basins is by no means an « immovable» boundary.—(v. § 18, p. XX).

§ 108.—LAPPARENT, one of the greatest geologists of the century, after describing the mountain regions of Asia, Africa and South America, concludes that: *there is nothing so artificial as the notion of the great watersheds upon which the whole edifice of physical geography was formerly based.*

The following are his own words: « C'est pourquoi rien n'est plus artificiel que cette notion des grandes *lignes de partage des eaux,* sur laquelle reposait autrefois tout l'édifice de la géographie physique. A coup sûr, il faut bien qu'il s'opère un partage des eaux courantes selon les pentes, et que chaque territoire se divise en bassins fluviaux, eux-mêmes réunis par groupes selon les mers dont ils sont tributaires. En suivant de proche en proche, vers l'amont, les dernières ramifications des cours d'eau, ainsi que des rigoles qui les alimentent en temps de pluies, on

finira toujours par rencontrer une suite de points, à partir desquels la pente dirigerait les eaux vers un autre bassin. L'ensemble de ces points formera la *ligne de partage*. Mais ce serait une grande erreur de croire que de telles lignes puissent toujours être mathématiquement définies. C'en serait une plus grande d'imaginer qu'elles doivent en tout cas s'accuser franchement dans la topographie, et que les principaux accidents du relief coincideront d'une manière constante avec les limites des grands bassins hydrographiques. On pouvait le croire à l'époque où, conformément à un préjugé qui datait du moyen age, les montagnes étaient considérées comme les *os de la terre ferme*. Alors les atlas se faisaient un devoir de mettre cette *ossature* en pleine lumière, par un figuré où les grandes lignes de partage formaient comme une sorte de *colonne vertébrale*, d'où les lignes secondaires se détachaient à titre de branches, ramifiées elles-mêmes à l'infini. A quel point cette conception est peu conforme à la réalité, c'est ce dont il est aisé de s'assurer par l'examen des cartes hypsométriques. »

A cursory glance at the map presented by the Chilian Expert will suffice to show how far the preceding lines apply to it.

§ 109.—In page 14, after having pointed out the irregularities and deficiencies of some European water-partings, Mons. Lapparent continues: «D'ailleurs, au delà de ce point, une fois franchies les sources du Volga, il n'y a plus rien de sérieux qui établisse une séparation quelconque entre les affluents de ce fleuve et ceux du lac Ladoga; et c'est merveille que la ligne de partage parvienne jusquà l'Oural, à chaque instant recoupée par des canaux qui mettent le bassin de la mer Glaciale en communication avec celui de la Caspienne. Quelle différence entre cette allure si souvent effacée, et ce qui donnerait à penser les anciennes cartes soi disant physiques, où l'on avait soin de marquer, par un figuré continu, semblable à celui des montagnes, la ligne séparative des eaux européennes»!

§ 110.—In page 15 he observes: «A ceux qui, par contre, se plaiaient à mettre en regard la remarquable homogénéité de la

Cordillère des Andes, il serait aisé de répondre que, pour l'Amérique du Sud, c'est une étrange ligne de partage que l'arête de ce bourrelet, qui semble s'être dressé uniquement pour empecher les eaux du continent d'arriver au Pacifique; enfin que le Nevada et l'Utah, avec leurs grands bassins intérieurs, enlevent singulièrement à la valeur des Montagnes Rocheuses, considérées comme arête hydrographique principale».

§ 111.—But the author is perfectly aware of what happens in the Southern part of the Andes, as can be seen in page 576:

«Au sud du 40° parallèle, la chaîne des Andes ne forme pas nécessairement la ligne de partage entre les deux océans, *et quelques fleuves du Chili la traversent pour prendre leurs sources en Patagonie.* C'est sans doute l'effet de *la prépondérance que les pluies venant de l'Ouest ont donnée aux cours d'eau chiliens, ce qui leur a permis d'entailler la chaîne et de pousser leurs eaux de tête en arrière.*—Au contraire, le versant Pacifique de la Patagonie est très faiblement arrosé».

§ 112.—Colonel George Earl Church confirms both Tarr's and Lapparent's views concerning the way nature acts upon watersheds. Although the paragraphs transcribed below were not written on that subject, they have notwithstanding a direct bearing on it:

«Immense quantities of detritus have found their way down the Andes. The volume carried by the little river La Paz, the remotest branch of the Beni, is astounding. I once descended it to ride round the base of Mount Illimani. The river is so hemmed in between the material of the Titicaca basin and that monarch of the Andes, that I had to ford it 108 times in one day. It has cut a profound gorge through the inland range, perhaps 50 feet wide and 600 feet deep. The overhanging precipices looked not over 40 feet wide at the top. Through this dark rent, which I had to penetrate or turn back, the river swept me, horse and all, as if I had been launched from a catapult.

«The bed of detritus and alluvium, which the river skirts for

about fifty miles, is one of the most remarkable in the world. Forbes gives it a total thickness of 2000 to 2500 feet» of alternating beds of grey, bluish and fawn colored clays, gravel and shingle beds, with boulders of clay slate, greywacké, and granite, frequently of enormous size and well rounded as if by the action of water. In my ride down the valley, I saw nature at work tearing into this deposit, and sending it on its way to the great basin of the Beni and Mojos. During certain months, generally from November to March, a prolonged and violent local storm may arise in some lateral valley of the river. The waters then sweep impetuously down, taking with them hundreds of thousands of cubic yards of material which they pile across the La Paz river. The mass of clay and boulders rapidly becomes cemented and compacted, and holds its place until the La Paz in turn, swollen by some storm from Illimani, bursts the huge dam and hurls its contents down the valley. I noticed boulders of many tons weight, at least 300 feet above the bed of the river, sticking like half exposed marbles in the side of the perpendicular wall of detritus which towered even high above them.

Similar denudation is going on along lhe entire Andean slope. (v. THE GEOGRAPHICAL JOURNAL—Oct. 1898—«*Argentine Geography and the ancient Pampean sea*»).

§ 113.—In order to fix the meaning of the foreign technical words that bear on the subject, and to compare them with their English equivalents, Dr. Karl. Berg was consulted, and he kindly sent some paragrahps in German from BROCKHAUS'S *Lexicon*, vol. VI, p. 936, of which the following is the translation: «The tracts of land taken together which send their waters to one and the same main river, form their fluvial area of catchment or drainage *(Fluss oder Stromgebiet)*, also called the basin *(Becken oder Bassin)*. The areas of drainage of several rivers, which flow into the same sea, form together the area of drainage of a sea or an ocean *(Meergebiet)*. The boundary between two river-basins is called a watershed *(Wasser-*

scheide); but the limit between two marine basins is called the principal watershed *(Hauptwasserscheide)*.

«Europe has a principal watershed, which from the northern Urals extends in a slanting direction down to the south of Portugal. In Asia there are two principal watersheds which lie at right angles to each other. Africa has also two. The most intricate ones are those of America. These partings or edges *(Ränder)* of the river basins invariably lie comparatively higher, but by no means on the absolutely highest points between two drainage areas. *They often strike quite near* and parallel to the more elevated mountain ranges, *often quite far from them and in quite a different direction;* they often stretch through plains as low watershed backs *(niedrige Wasserscheiderücken)*, scarcely noticeable swellings of the ground,—valley watersheds, *(kaum merkbare Bodenanschwellungen.—Thalwasserscheiden)*..

«Frequently the sources of several river basins are situated on heights, in close proximity to each other, as for instance on the Fichtel mountains, the sources *(Quellen)* of the Main, the Naab, the Eger and the Saale, the first of which belongs to the Rhine,—the second to the Danube,—and the two latter to the Elba-basin. Occasionally, however, rivers issue out of one and the same swamp, in opposite directions and belonging to different basins. In plains, the watersheds are often so flat, that one can easily carry boats with merchandize from one river into another»....

§ 114.—In the *Proceedings of the Royal Geographical Society*, the words *watershed* and *water-parting* are both employed; and some writers in England prefer the latter, forgetting perhaps the etymology of the first term, and that in English the verb «to shed» not only means: «to cause to flow out, to spill» etc, but also «to part, to separate, to divide»: as to shed the hair (now only provincial English and Scotch), according to the *Century Dictionary*.

In vol. 9 (1887) of the Royal Geo. Soc, page 580, we read

the following: «BREAK IN THE ANDEAN WATERSHED OF SOUTHERN CHILI.—The discovery by D. Guillermo Cox on his journey to the source of the Limay, a quarter of a century ago, that the main chain of the Andes did not in that part of Chili form the watershed between the rivers flowing respectively to the Atlantic and Pacific Oceans, has been corroborated by an expedition sent out by the Chilian government to those latitudes; *this expedition having proved that certain rivers flowing into the Pacific Ocean rise to the east of the Andes, in a plain* at the comparatively low altitude of 1650 feet above the sea level.

«These rivers spring from small lakes, and cut their way through the Cordilleras in deep gorges. Thus while the Limay, a tributary of the Rio Negro, flowing into the Atlantic rises on the west of the main ridge» (this is not exact) «numerous Pacific streams rise on the east. Another important stream, *the Palena which rises to the east of the Andes,* and disembogues in the Gulf of Corcovado, opposite the southern end of the Island of Chiloe, has been recently explored by Captain Serrano, who ascended it in a boat as far as long. 72°. The Palena proves to be navigable for some distance from its mouth, and in its lower course is half a mile broad. These discoveries will affect the political boundary between Chili and the Argentine Republic, which had been fixed by treaty as lying along the watershed». (v. §§ 34 and 34 *bis*).

Article 2 of the Protocol of 1893 removes any difficulty like the one hinted at in the conclusion of the above paragraph; and both said protocol and the treaty of 1881 establish that the watershed meant by them is the one of the most elevated crests of the Andes and not the continental divide.

§ 115. — The reader will find some interesting remarks in ALFRED PHILIPPSON'S, *Studien über Wasserscheiden,* a work which should be carefully studied, as it is a very good monograph on the subject of watersheds. The following is part of the abstract made in page 61 of the same volume of the « Proceedings »: « In the second section the author deals with the

displacement of water-partings under the heads of the fall of waterpartings to a position of stability; factors *which can effect changes in water-partings;* and *the obliteration and reformation of water-partings.* In the third section he deals with the topographical morphology of waterpartings under the heads of peculiarities of the vertical cross-section, the vertical longitudinal, the horizontal projection. In the fourth section, the author treats of the course of waterpartings in various regions of the globe, arranged under his previous classification of types of surface.

« The author endeavours to arrive at a satisfactory definition of a water-parting.

« *The definition of water-parting as the boundary between river-basins he considers too vague.* The definition of a water parting as the boundary line between two directions of drainage *he considers too wide.* He offers the following as more satisfactory than either:—a water-parting is that line which divides two different directions of surface drainage from each other. Finally he divides water-partings into two great groups: 1. Those which stand in approximately complete relation with the present arrangement of their sub-structure; these he designates as Concordant Water-partings. — 2. Those which do not stand in any such relation, and which the author designates as Discordant Water-partings. » (v, § 17-29).

§ 116.—In books on national surveys, the word *watershed* is continually employed in the sense it has in our treaties. See for instance the following passages:

« Along the eastern border, the *watershed* north of Warm Water Pass forms a high wooded *divide,* which in the region Buffalo Fork Peak is broken down in the gap of Togwotee Pass, from which point it pursues a course east of north, heading Buffalo Fork, and throughout its extent within the district it is made up of a vast accumulation of volcanic materials, which, to the north rise above timber line. Intermediate, or between the continental divide and Jacksons Basin, the north-eastern quarter, &c.; and the crest was finally buried beneath a vast

accumulation of volcanic materials in the region of the *plateau of the continental watershed;* and to the east, the plateau rises into the *continental watershed*, of which it forms the western flank within the limits designated;—the *watershed* which separates this main drainage from that flowing into the Willow Creek basin is alike irregular in its course and elevation, though uniformly lower than the topographic crest;—a series of spurs united by a medium ridge to the *watershed*, &c.;—the south-west section of the district is occupied by an extensive basin area which forms the *low watershed* draining south,» &c. (HAYDEN, *Geological and Geographical survey of the territories of Idaho and Wyoming*, pages 325, 360, 467, &c.)

§ 117.—*Treaties, &c.* In the convention between Great Britain and the Netherlands defining boundaries in Borneo, signed at London June 20th of 1891, arts. 2 and 3 mention «a range of mountains which form on that parallel the *watershed* between the rivers running», &c. and establishes that the «boundary line shall follow the *watershed* of the rivers», &c. *(State Papers*, vol. 83, p. 42).

In the British Proclamation annexing the Xesibe Country to Cape Colony, dated October 25th of 1886, we find the words: «thence along the *watershed* past the Umpepeto bush, over the Sonkana Hills, &c. *(State Papers,* vol. 77, p. 954).

In the Convention between H. M. Royal Commissioners and the Representatives and Transvaal Burghers, dated August 3rd 1881, we find the following: «thence to the highest point of the Mapuluma range, the *watershed* of the little Usuto River on the North», &c. *(State Papers*, vol. 72, p. 901).

Note n. 10.

APPARENT (page 3)

§ 118.—This word has been employed instead of *clear*, as it seems to express perfectly the sense of the article. According to the *Century Dictionary* it means: «exposed to the sense of

sight; open to view; capable of being seen, or easily seen; visible to the eye; capable of being clearly perceived, obvious, plain or clear». The latter show that «clear» might be employed, but «apparent» gives the exact meaning.

Note n. 11.

RECORD (page 3)

§ 119.—The Spanish *acta* may be translated by «minute» *(v. Century Dictionary);* but the joint British and North American Commissions, in their reports upon the survey of the Boundary between of the United States and the possessions of Great Britian, employ the word *record* when they draw up the minutes of their proceedings.

The latter has therefore been adopted.

Note n. 12.

FIRM AND VALID (page 3)

§ 120. — Those words are synonyms of «to stand good» according to the *Century Dictionary*. They are however a correct and literal translation of the Spanish text.

Note n. 13.

OVERLAND (page 3)

§ 121.—«Passing by land; made or performed upon or across the land» *(v. Century Dictionary)*, is a faithful translation of the Spanish «por tierra».

Note n. 14.

WEST (page 3)

§ 122.—Evidently the meridian must be west, Greenwich, as can be seen in art. 3. In the translation of the *State Papers*, the omission has been saved thus: 70° west (Greenwich).

Note n. 15.

52° S. (page 3)

§ 123.—See note 2.

Note n. 16.

DIVORTIUM AQUARUM OF THE ANDES (page 3)

§ 124.—The treaty says: « El (article *the* in the singular) *divortia* (the latin plural of *divortium*) *aquarum.* »

This mistake has crept into many official and unofficial documents.

The plural of the article *el* in Spanish is *los,* but as the first has been employed, the translation ought to be—*the divortium aquarum,* — which on the other hand is the way it is put in English dictionaries and books. (v. § 40, note, and § 67).

Note n. 17.

THWART (page 4)

§ 125.—*Contrariar* might be translated by—to contrary—which means « to oppose » but the word is not much used; and on the other hand the verb « to thwart » has all the energy of the Spanish term, as it means « to cross a purpose; to contravene, frustrate or baffle » (v. *Century Dictionary*, 4th acception).

Note n. 18.

GREAT SEAL (page 6)

§ 126.—*El sello de las armas* of a Republic is its seal of state, and it is equivalent to what is called in England « The Great Seal », which is used in sealing the writs to summon Parliament, the treaties with foreign nations and other important papers affecting the United Kingdom.

Note n. 19.

CORDILLERA (page 14)

§ 127.—In article 1 of the treaty of 1881, after stating that the Cordille*ra* of the Andes is the boundary between Argentina and Chili, a reference is made to said Cordille*ras* (in the plural), which evidently is a misprint or an error of redaction. This mistake has been saved in art. 1 of the Protocol of 1893, which expressly refers to and copies a part of art. 1 of the treaty of 1881 (v. § 67).

Note n. 20.

SLOPES (page 14)

§ 128.—It has been shown in note N°. 6 that the word *vertientes* has in Spanish the following two meanings:

N°. 1: *as a substantive*, it means according to the best Spanish dictionaries and scientific writers on the subject: «the sides down which flow the waters of a mountain, or place or ground over which waters run or may run».

N°. 2: as an adjective or as *present participle* of the verb *verter* preceded by the word *aguas*, it means: *las aguas que bajan de las montañas ó sierras*. (Dic. of the Royal Spanish Academy) «the waters that descend mountains or mountain ranges».

The participle or adjective is therefore a generic term which applies to every class of water flowing down a mountain, be it in the form of rills, rivulets, ice streams, rain water or any way in which the slopes or declivities of a mountain shed water.

Of this second acception, no equivalent exists in the English language: it is not to be found in the scientific authorities; and professional men from England,—many of whom have been consulted,—declare that such is the case.

If in Article 1 of the Protocol of 1893, *vertientes* meant waters from the mountains, the nearest translation would be «mountain waters».—The exact translation can only be made by means

of a periphrasis, viz.: «the waters that descend down the mountains», as the Spanish Academy puts it, *ut supra.*

TOLHAUSEN, in his German-Spanish Dictionary, translates *aguas vertientes* by *herabfallendes Wasser,* i. e. «waters that flow down or that fall from above». Near enough, indeed, but it fails to give the mountain origin of waters.—(v. § 5).

§ 129.—In the French language, an equivalent for *aguas vertientes* is also lacking; yet French authors know that they do not signify «sources» or «springs». The French-Spanish dictionary of Vicente Salvá says «*aguas vertientes—Eaux de pluies qui descendent du haut des montagnes*». «Rain waters that descend from the heights of mountains».

§ 130.—It should be borne in mind that when Spanish writers wish to indicate the waters that have their origin in a source or a spring *and flow out of same,* the words *aguas vivas* are employed,—sce Dictionary of the Royal Spanish Academy, verb *agua viva—la que mana y corre naturalmente:*—«the water that issues and runs naturally».—The word, however is not employed in Art. 1 of the Protocol of 1893, nor in any other article of the treaties as an adjective or as a participle of the verb *verter,* and it must be translated by «slopes».

§ 131.—As far as the construction of the article is concerned, either translation is indifferent, as it provides that *all lands and all waters* to the east of the boundary line shall belong to Argentina, and those to the west, to Chili; and also that the waters shall *be cut* by the frontier-line in case it does not coincide with the watershed of the principal chain of the Andes (*v.* Arts. 1-2 of Protocol 1893, and *v.* also Note 6, on slopes).

Take away the enumeration of «lakes, lagoons, rivers etc» and yet Article 1 will establish: «that all *lands* and all *waters* to be found east of the line of the most elevated crests of the Andes as may divide the waters» are Argentine, and Chilian those to be found to the west of said line.—(*v.* §§ 4-7 and 68-93 on the same word).

Note n. 21.

PRINCIPAL CHAIN OF THE ANDES (page 14)

§ 132.—*Encadenamiento* is a word which is not to be found in the Dictionaries of the Spanish language in the orographic sense which it has in this article. American authors employ it frequently in order to express the idea of a mass of more or less parallel ranges, also interlocking with each other, that respectively belong to one of the mountain systems in which the Andes are sub-divided (v. § 16).

Such ranges now and then join together and form knots, (nudos), for example, the one of Uspallata. The German word *Verkettung* would be a good translation of *encadenamiento.*

§ 133.—Diplomatic documents, such as the treaties between France and Spain employ the word *cadena* instead of *encadenamiento.* Thus, the main range of the Pyrenees is called *la cadena* (chain) *principal del Pirineo,* or *de la cordillera principal del Pirineo* (*v.* Arts. 4-15 Boundary Treaty betwen France and Spain, 2d December 1856, and Art. 7 of the treaty between same nations 14th April 1869).

Note n. 22.

SHOULD BE FOUND (page 14)

§ 134,—In this instance the verb. *aparecer* does not mean—«to appear», but *encontrarse* or *hallarse,* i. e. «to be found.»—(*v.* Dic.s of the Spanish Academy and Dominguez's).

Note n. 23.

WATERSHED, AND APPARENT (page 15)

§ 135.—See Notes 9 and 10.

Note n. 24.

SEEING THAT (page 15)

§ 136.—The Spanish verb *hacer* has not in this case its ordinary meaning of «to make» or «to do», but that of «to bring «about as a result; superintend the execution or the perfomance «of a thing,—so as to effect a specified result; make sure: with «an object clause, with *that*, specifying the result»,—which is the fifth (5) acception of the verb *to see* in the Century Dictionary.

«This geographical condition»—v. § 42.

Note. n. 25.

OR QUEBRADAS (page 16)

§ 137.—It should be «and» instead of «or», as streams and quebradas are two very different things.

§ 138.—The word *quebradas* has been left as in the Spanish text, because it has been adopted in the English language.

Prescott, in his Conquest of Peru (vol. 1, chap. ter 1) says: «broken up by precipices, furious torrents and impassable *que-* «*bradas*,—those hideous rents in the mountain chain, whose «depths the eye of the terrified traveller vainly endeavours to «fathom».

«*Quebrada* (Sp., broken, uneven ground, prop. fem. of *quebrado* pp. of *quebrar*, break). A gorge; a ravine; a defile, a word occasionally used by writers in English on Mexican and South American physical geography, and by the Spanish Americans themselves, with about the same meaning as *barranco v.* Century Dictionary, *verb. quebrada.*

§ 138.—*Barranco,* according to the Dictionary of the Royal Spanish Academy, is a «Quiebra profunda que hacen en la tierra las corrientes de las aguas», i. e. a deep break or opening made in the ground by water currents.

Note n. 26.

IMMOVABLE (page 4 and 23)

§ 139.—Here we have again the very same word employed in Art. 6 of the treaty of 1881. The shifty nature and the capricious location of the Barros Arana boundary-line tend to show that the word «immovable»,—which does not offer any difficulty of construction,—would be overruled by him as if it did not figure in the treaties.

All Spanish, French, Italian, German Latin dictionaries agree with the Century Dict. and Cyclopedia in the following definitions:

«*Immovable:* Incapable of being moved or displaced; too heavy or firm to be moved» (and what is firmer or heavier than the main range of the Andes?); «firmly fixed; fast.—Incapable of being altered or shaken; unalterable; unchangeable;—not liable to be removed; permanent in place».

(*V.* §§ 37-43).

FE DE ERRATAS

PAGE	LINE		READ
IV	27	is it.....	it is.
XI	30	expert.....	expert's.
XII	22	§ 13	§ 13 *bis*.
XVII	28	every line is which the upper part of two different directions	every line in which the upper parts of two different incline-directions.
XXXII	31	Segre.....	Segres.
XLI	30	The principal chain of the Andes is to remain between them...	(suppressed).
90	9	themselves	itself.

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